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Maternal Smoking Trends in Missouri: 1978–1997

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Smoking during pregnancy is associated with reduced birth weight, increased fetal and infant morbidity, and other adverse pregnancy outcomes. Since the behavior is prevalent and these outcomes are considered to be preventable, trends in maternal smoking are of great interest to public health. This article examines three aspects of trends in smoking among pregnant Missouri resident women:

- Changes in the rate of prenatal smoking by race and age of mother for the period 1978–1997;
- Changes in the smoking rates of the prenatal population by selected characteristics for 1992–1994 and 1995–1997; and
- Changes in the smoking rates of the prenatal population by selected characteristics that smoked one pack of cigarettes or more per day for 1992–1994 and 1995–1997.

Data for this analysis comes from Missouri birth certificates for 1978–1997. The data set has smoking information on 98 percent of 1.5 million live births. Records with unknown smoking status are included in the study since they only comprise two percent of the total records. Of the records with unknown smoking status, 79 percent are resident births recorded in states other than Missouri. The smoking criterion on Missouri birth certificates for 1978–1988 was defined as "cigarettes smoked per day" with possible responses of "none," "less than a pack per day," and "a pack or greater per day." The criterion was revised in 1989 to conform to the United States standard birth certificate, which asks whether tobacco was used during pregnancy and how many cigarettes were smoked each day on average. Mothers were categorized as smokers or non-smokers regardless of the number of cigarettes smoked. Those who smoked one pack (20 cigarettes) or more per day were classified as heavy smokers. Data for the total population includes all races.

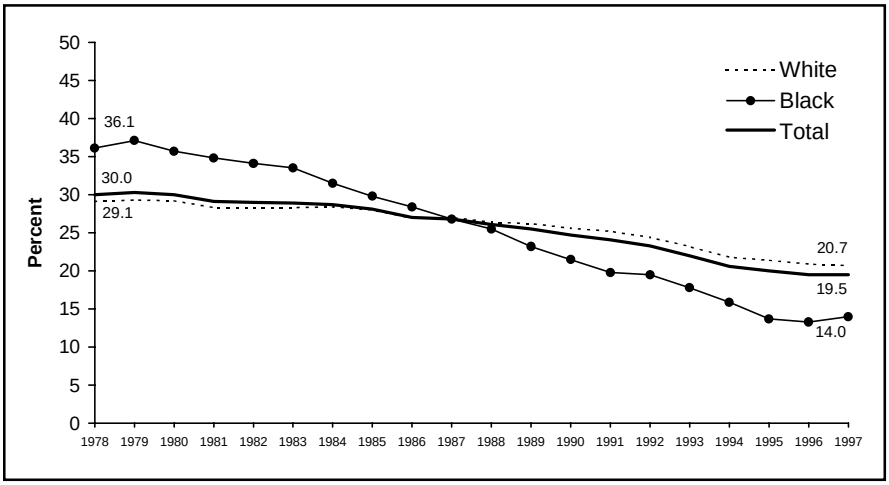

Figure 1. Percentage of women smoking during pregnancy by race, Missouri resident births, 1978–1997.

The number and percent of women smoking during pregnancy was much lower in 1997 (14,409, 19.5%) than it was in 1978 (21,803, 30.0%). Figure 1 shows changes in the percent of maternal smoking by race and for the total population for 1978–1997. Given that the majority of women in Missouri are white, the trend line for all women is very similar to the white trend line. It is notable that the black rate of maternal smoking began above the white rate and ended below it, decreasing 61.2 percent over the 20 year period. By comparison, the white and total rates only decreased 28.9 and 35 percent respectively. However, in 1997 the black smoking rate rose for the first time since 1979, while the white rate continued to decline.

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Figure 2 shows the percent of white women smoking during pregnancy by age group for the study period. During this time the rate for each age group sloped downward slightly. Among white women, teens had the highest rate of smoking over the entire 20 years, with the rate decreasing by age for all but the first three years. Among women under the age of 30, both the number and percent smoking during pregnancy decreased over 20 years. For white women age 30 and over, the percent smoking dropped but the actual number of women smoking increased. The number and percent of smoking teen and 20–24 year old mothers began to increase near the end of the period (1995 and 1996 respectively) after decreasing for most of the years.

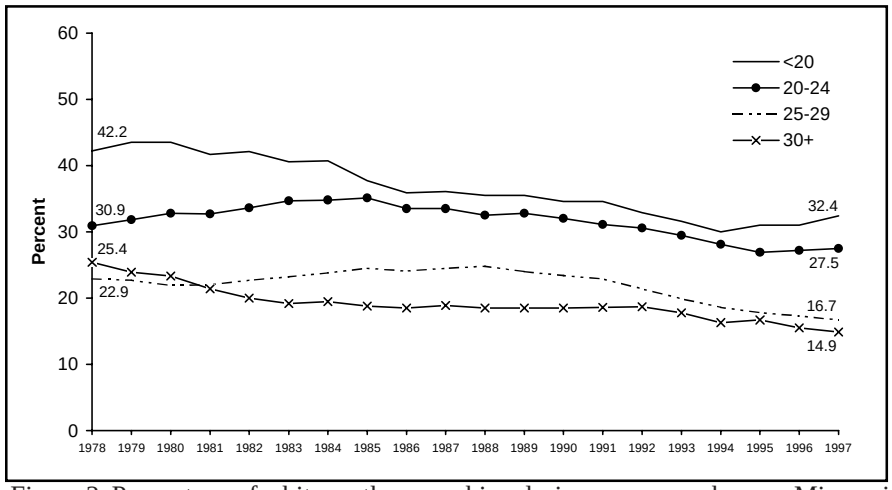

Figure 2. Percentage of white mothers smoking during pregnancy by age, Missouri resident births, 1978–1997.

Figure 3 shows the rates for black teens had the greatest change of any age group of either race, decreasing 76 percent from 1978–1997. The percent of maternal smoking dropped for all black age groups, yet the decrease among women age 30 and over was smaller than the other groups. In 1978, the percent of smokers 30 and over was the lowest among black women. By 1997, this group had the highest rate. Although the percent decreased, the number of black women age 30 and over that smoked actually increased.

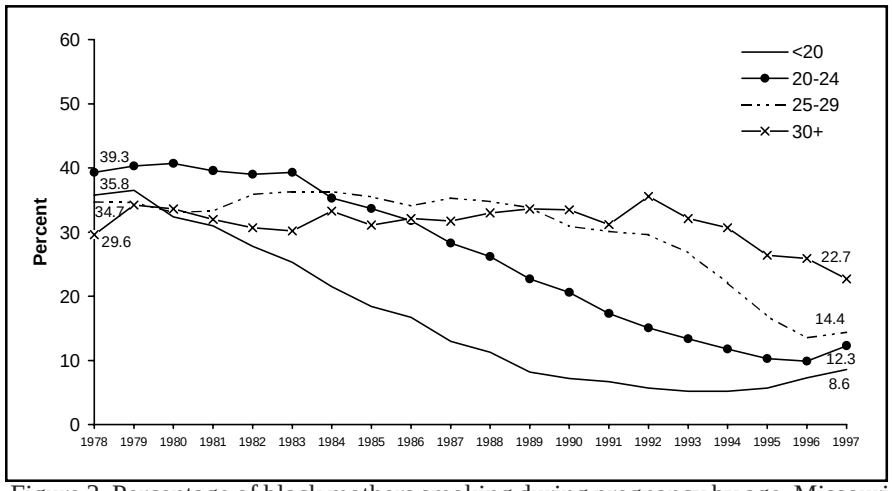

Figure 3. Percentage of black mothers smoking during pregnancy by age, Missouri resident births, 1978–97.

An article published in the May 1991 issue of *Missouri Monthly Vital Statistics* examined characteristics of women who smoked during pregnancy and of those who smoked heavily (a pack or more per day) for the years 1978–1980 and 1986–1988. Three years of data were used to reduce the random fluctuation of small numbers that were present in some areas. Since there has been a change in the long-term smoking rates by race and age in recent years, this article uses a similar approach to compare these characteristics for the years 1992–1994 and 1995–1997.

Table 1 shows that the percentage of all women who smoked during pregnancy dropped 10.5 percent from 1992–1994 to 1995–1997. Among all characteristics reviewed, the greatest decreases for the total population, in descending order, were among women not on Medicaid (19.9%), women ages 25–29 (18.4%), married women (16.8%), women with at least 16 years of education (16.3%), and women living in Metropolitan Statistical Areas* (15.1%). In almost all cases, black rates were lower than white rates. The exceptions are among women age 30 and over, women having 16 or more years of education, and women having their fourth or greater birth. In each case the difference became smaller by 1995–1997.

The only area in which an increase in smoking occurred was among teens, where both the number and percent increased. While no percent change for white teen mothers is shown in Table 1, both the number of live births and the number smoking increased for this segment of the population. The particular grouping of years for this study masks what is shown in Figure 2. The percent

*A metropolitan statistical area consists of a central city of 50,000 population or more, and the county in which it is located; it may also include adjacent counties/communities that have a high degree of economic and social interaction with the center-city area. Missouri has six metropolitan statistical areas: Columbia/Boone county; Joplin/Jasper and Newton counties; Kansas City/Cass, Clay, Clinton, Jackson, Lafayette, Platte and Ray counties; St. Joseph/Andrew and Buchanan counties; St. Louis/Franklin, Jefferson, Lincoln, St. Charles, St. Louis and Warren counties; and Springfield/Christian, Greene and Webster counties.

Table 1. Percentage of Women Who Smoked During Pregnancy by Selected Characteristics by Race, Missouri Resident Births, 1992–1994 and 1995–1997

Category	1992–1994 Percent Smoking			1995–1997 Percent Smoking			Percent Change		
	Total	White	Black	Total	White	Black	Total	White	Black
Mother's Age									
Less than 20	23.3	31.5	5.4	24.7	31.5	7.2	6.0	0.0	33.3
20–24	26.0	29.4	13.5	24.0	27.2	10.9	-7.7	-7.5	-19.3
25–29	20.6	20.0	26.4	16.8	17.3	15.0	-18.4	-13.5	-43.2
30+	19.0	17.6	32.8	16.4	15.7	25.0	-13.7	-10.8	-23.8
Education (Years)									
Less than 12	40.2	48.0	21.7	38.6	45.5	19.0	-4.0	-5.2	-12.4
12	25.4	27.1	18.4	23.7	25.9	13.9	-6.7	-4.4	-24.5
13-15	15.5	16.2	12.5	14.1	15.1	8.8	-9.0	-6.8	-29.6
16 or more	4.3	4.2	7.1	3.6	3.6	3.9	-16.3	-14.3	-45.1
Birth Order									
First	17.4	19.6	7.0	16.3	18.1	6.6	-6.3	-7.7	-5.7
Second or Third	23.4	24.6	18.0	20.6	22.0	13.1	-12.0	-10.6	-27.2
Fourth or more	33.5	31.9	37.6	29.4	29.1	30.7	-12.2	-8.8	-18.4
Married	16.7	17.2	11.7	13.9	14.4	7.7	-16.8	-16.3	-34.2
Unmarried	33.2	43.5	19.4	31.6	41.2	15.3	-4.8	-5.3	-21.1
Medicaid	33.9	40.6	19.6	32.0	38.2	15.6	-5.6	-5.9	-20.4
Non Medicaid	14.1	14.3	13.6	11.3	11.6	9.5	-19.9	-18.9	-30.1
MSA*	20.5	21.6	18.0	17.4	18.7	13.6	-15.1	-13.4	-24.4
Non-MSA*	25.7	26.3	15.5	25.0	25.6	14.3	-2.7	-2.7	-7.7
TOTAL	**22.0**	**23.2**	**17.8**	**19.7**	**21.0**	**13.7**	**-10.5**	**-9.5**	**-23.0**
Number	224,430	182,485	37,972	220,477	182,502	33,060			

*MSA = Metropolitan Statistical Areas

of white teens smoking while pregnant declined during 1992–1994, then changed direction and nearly returned to the 1992 level during 1995–1997. Among black teen mothers, the rate increased 33.3 percent, as the number of live births to black teens dropped and the number of smokers rose. The increase in smoking among all pregnant teens made them the age group with the highest smoking rate.

Smoking characteristics identified in the May 1991 article for marital status, education and birth order held for this study as well. Specific rates in all categories declined, and black rates continued to be smaller than white rates in most cases. The percentage of unmarried women smoking during pregnancy continued to be higher than for married women. Rates of smoking continued to be higher for women without a high school education and continued to decrease as years of education increased. The percentage smoking was lower for first births than for subsequent births, with the fourth or higher order birth having the highest rate. In addition, women receiving Medicaid had a higher percentage of smoking than women not on Medicaid. Each of these characteristics held for all women, regardless of race.

For 1995–1997, a higher percentage of mothers who lived in rural areas smoked than those living in Metropolitan Statistical Areas, regardless of race. The opposite had been true among black women for 1992–1994.

Heavy smoking during pregnancy (i.e., one pack or more per day) decreased 20.8 percent among all women from 1992–1994 to 1995–1997. (Not shown in figures or table.) The percentage of heavy smokers declined for each characteristic, continuing the decreases reported in the May 1991 article. The greatest decreases from 1992–1994 to 1995–1997, in descending order, were for non-Medicaid women (30.2%), married women (28.1%), women aged 25–29 (26.8%), women living in a Metropolitan Statistical Area (25%), women with 16 or more years of education (22.2%), and women having their second or third birth (20.5%). In every case, the rate of heavy smoking among white women was higher than the rate among black women (6.5% vs. 2.1%, overall respectively in 1995–1997).

For black and white women, the characteristics of heavy smokers are the same except for age, where they are

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reversed. Heavy prenatal smokers are more likely to be unmarried, have less than a high school education, have had at least one previous live birth, receive Medicaid and live in a rural area. Among black women, heavy smokers are more likely to be 30 or older; among white women they are younger, age 20–24. For the total population, most women who smoke heavily during pregnancy are white.

It is evident that smoking during pregnancy has declined over several years. This decline has been shown to be consistent over several characteristics. It is also evident that maternal smoking has recently begun to increase among young women. When this portion of the population is examined by race, two different pictures emerge.

Although the percent of prenatal smoking among white teens declined between 1978–1997, this group maintained the highest rate of smoking among white women over that same period. Those in the 20–24 year age group maintained the second highest rate. This occurred at a time when percentages among women over age 24, and among all black age groups, fell at higher rates. The white teen rate never went below 30 percent and has increased since 1994 to 32.4 percent in 1997.

Among black women, the percent of teens that smoked during pregnancy dropped 76 percent over this period. It went from being the second highest rate to the lowest rate among black women. Yet the black teen rate has increased every year since 1994 (5.2% to 8.6% in 1997). When the data was grouped in three year clusters, the black teen rate was the only rate among any age group, category or race to show an increase in smoking. Even with this increase the number of white teens smoking during pregnancy is over 10 times that associated with black teens (2,397 vs. 231 respectively for 1997).

As with Missouri, national birth certificate data (minus California, Indiana, New York State and South Dakota) shows an overall decrease for mothers smoking during pregnancy and an increase for pregnant teenagers. However, for 1996 (the most recent national data available) the percent of Missouri mothers who smoked during pregnancy was 44 percent above the national rate of 13.6 percent and only four states recorded higher rates than Missouri.[1]

If women who smoke during pregnancy are representative of the general population, then increasing rates for teens will mean increasing rates for all groups as the cohort ages. Smoking rates among the characteristics reviewed will also go up as young mothers have more children and older women have their first child. These results emphasize the need for more and better smoking avoidance programs targeted at young women. Further exploration of social and economic factors influencing smoking behavior is also indicated.

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TIPS ON QUITTING SMOKING

Health professionals can play a substantial role in helping their patients quit smoking. At least 70% of smokers see a physician each year, and more than 50% see a dentist. Additionally, at least 70% of smokers want to quit and have already made at least one quit attempt. By spending just a few minutes, providers can be more effective in their cessation interventions.

- ✔ Implement an office-wide system that identifies all tobacco users at every visit, such as by expanding the vital signs to include tobacco use.
- ✔ Give direct, clear and personalized advice about quitting smoking and staying smoke-free.
- ✔ Assist the patient by helping them set a quit date and give key advice on improving success (such as by being totally tobacco abstinent after the quit date, destroying cigarettes, and planning on how to handle potential relapse challenges). Help your patient understand that quitting smoking is hard and that people can make two to three tries, or more, before finally being able to quit.
- ✔ Encourage nicotine replacement therapy, as appropriate.
- ✔ Provide cessation materials and schedule follow-up, especially during the first week of quitting.
- ✔ Show genuine concern about the patient's health and their quitting efforts.
- ✔ If the patient is not successful, provide support and assistance for quitting again.

For more information on smoking cessation and to obtain free copies of *Clinical Practice Guidelines on Smoking Cessation*, contact the **Agency for Health Care Policy and Research Clearinghouse, P.O. Box 8547, Silver Spring, MD 20907** or on-line at **http://www.ahcpr.gov.**

For additional information on tobacco-related issues or Baby and Me Smoke Free intervention materials for pregnant women contact the **Missouri Department of Health ASSIST program at (573) 876-3256** or on-line at **http://www.health.state.mo.us/SmokingAndTobacco.**

STD Clinician Course

March 18–April 22, 1999

This course, an intensive overview of STDs, includes 18 hours of lecture, 2 hours of case discussion and 24 hours of supervised clinical practicum in the St. Louis STD clinics.

COURSE OBJECTIVES

At the end of this course, participants will be able to:

- Demonstrate improved skills in completing a STD history and physical exam.
- Integrate HIV risk assessment into patient care.
- Describe clinical features of common STDs, including gonorrhea chlamydia, genital herpes, vaginitis/vaginosis, syphilis, HPV, urethritis/cervicitis syndromes, pediculosis, scabies and PID.
- Demonstrate universal precautions during specimen collection.
- Describe the process of partner notification and contact tracing.

TARGET AUDIENCE

Health care professionals in public or private settings who provide clinical services to persons with STDs. Physicians, nurse practitioners, and physician assistants will find courses tailored to their level of expertise.

CME ACCREDITATION

The St. Louis STD/HIV Prevention Training Center is accredited by the Missouri State Medical Association to sponsor continuing medical education for physicians. The St. Louis STD/HIV Prevention Training Center designates this continuing education activity as 44 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

CEU ACCREDITATION

This course has been approved for 52.8 contact hours by the Missouri Nurses Association, which is accredited to approve continuing education in nursing by the American Nurses' Credentialing Center's Commission on Accreditation.

REGISTRATION FEE $90

For registration information contact:

Deloris (Dodie) Rother, MPH
St. Louis STD / HIV Prevention Training Center
Washington University School of Medicine
Ph: (314) 747-0294
email: std/hiv@im.wustl.edu **or**
drother@imgate.wustl.edu

St. Louis STD/HIV Prevention Training Center

http://www.umsl.edu/services/itc/std_ptc.html

Course Schedule & Faculty

Courses will be presented by faculty from Washington University School of Medicine, St. Louis University School of Medicine and community experts. Course instruction is coordinated by Bradley P. Stoner, MD, PhD, Medical Director of the Training Center.

Thursday, March 18, 1999 - 8:00 a.m.–11:30 a.m.

Overview of STDs - SUSAN BERSOFF-MATCHA, MD
History and Physical Exam for STD - SUSAN BERSOFF-MATCHA, MD
Specimen Collection- - JANE FISCHER-MESSMER, RNC, APN

Thursday, March 25, 1999 - 8:00 a.m.–11:30 a.m.

Herpes - SUSAN BERSOFF-MATCHA, MD
Human Papillomavirus - CATHERINE DEAN, MD, MPH
Syphillis - BRADLEY STONER, MD, PhD

Thursday, April 1, 1999 - 8:00 a.m.–11:30 a.m.

Gonorrhea - SHARON FREY, MD
Non-gonococcal Urethritis & Mucopurulent Cervicitis - BRADLEY STONER, MD, PhD
Vaginitis/Vaginosis - SUSAN BERSOFF-MATCHA, MD

Thursday, April 8, 1999 - 8:00 a.m.–11:30 a.m.

Pelvic Inflammatory Disease - ANDREA STEPHENS, MD
Ectoparasitic Infestations - PAUL L'ECUYER, MD
Chancroid and LGV - DANNY PAUL, MD
Hepatitis B - LINDA MUNDY, MD

Thursday, April 15, 1999 - 8:00 a.m.–11:30 a.m.

Assault and Substance Abuse - SHEILA BOYD, MD
Adolescents and STDs - CHRIS OHLEMEYER, MD
STD/HIV Interactions - BRADLEY STONER, MD, PhD

Thursday, April 22, 1998 - 8:00 a.m.–11:30 a.m.

Risk Assessment & Partner Notification - DELORIS ROTHER, MPH
Syndromic Management - BRADLEY STONER, MD, PhD
Case Discussion and Wrap-up - BRADLEY STONER, MD, PhD

Clinical Training

In addition to lectures, students will receive 24 hours of hands-on clinical training with time divided beween the St. Louis County Department of Health and the St. Louis City Department of Health and Hospitals STD clinics. Clinical training will be scheduled after completion of the didactic portion of the course at a convenient time for the students to receive one-on-one training with experts in the field.

Viral Sexually Transmitted Diseases

March 6, 1999 - 9:00 a.m.– 4:00 p.m.

This course is a comprehensive study of the diagnosis, management and treatment of the most common viral STDs, including herpes (HSV), human papillomavirus (HPV), and hepatitis B and C. This course includes 6 hours of lecture, and 8 hours of supervised clinical practicum in St. Louis STD clinics.

COURSE OBJECTIVES

At the end of this course, participants will be able to:

- Discuss current trends of infection with viral STDs, including demographic and behavioral correlates.
- Describe the current diagnosis and treatment recommendations for HSV, HPV, and hepatitis B and C.
- Recognize, differentiate and evaluate clinical manifestations of HSV and HPV infections.
- Interpret the basic laboratory tests used to diagnose viral STDs including serology and culture.
- Discuss methods to provide patient education regarding HSV, HPV and hepatitis.
- Describe the process of partner notification for viral STDs.

TARGET AUDIENCE

Health care professionals in public or private settings who provide clinical services to persons with STDs. Physicians, nurse practitioners and physician assistants will find courses tailored to their level of expertise.

CME ACCREDITATION

The St. Louis STD/HIV Prevention Training Center is accredited by the Missouri State Medical Association to sponsor continuing medical education for physicians. The St. Louis STD/HIV Prevention Training Center designates this continuing medical education activity as 14 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

CONTINUING EDUCATION

Application for continuing education contact hours has been submitted to the Missouri Nurses Association.

REGISTRATION FEE $40

For registration information contact:

Deloris (Dodie) Rother, MPH
St. Louis STD / HIV Prevention Training Center
Washington University School of Medicine
Ph: (314) 747-0294
email: std/hiv@im.wustl.edu **or**
drother@imgate.wustl.edu

St. Louis STD/HIV Prevention Training Center

http://www.umsl.edu/services/itc/std_ptc.html

Course Schedule

Courses will be presented by faculty from Washington University School of Medicine, St. Louis University School of Medicine and community experts. Course instruction is coordinated by Bradley P. Stoner, MD, PhD, Medical Director of the Training Center.

9:00–9:15 a.m. **Welcome**
DELORIS ROTHER, MPH

9:15–10:15 a.m. **Overview of Viral STDs**
BRADLEY STONER, MD, PhD

10:15 –11:30 a.m. **Herpes**
SUSAN BERSOFF-MATCHA, MD

11:30–12:30 p.m. **LUNCH**

12:30–1:30 p.m. **Human Papillomavirus**
CATHERINE DEAN, MD, MPH

1:30–3:00 p.m. **Hepatitis B**
LINDA MUNDY, MD

3:00–4:00 p.m. **Hepatitis C**
SHARON FREY, MD

Teleconferencing

In conjunction with the Instructional Technology Center at the University of Missouri–St. Louis, the Training Center will provide the didactic portion of this course using fiberoptic teleconferencing technology. Lectures will be two-way audio and visual, allowing for interaction beween faculty and students. Instruction will be provided at various sites across Missouri and Kansas. Course participants will attend the site of instruction closest to them, thereby reducing time away from their offices. After completing the didactic portion, participants will be scheduled for hands-on training in the St. Louis STD clinics at a convenient time.

MISSOURI SITES
Columbia
Kansas City
Poplar Bluff
St. Louis
Springfield

KANSAS SITES
Dodge City
Hays
Lawrence
Salina
Wichita

1998 Guidelines for Treatment of Sexually Transmitted Diseases

(Continued from the January-February, March-April, July-August and September-October 1998 issues of the *Missouri Epidemiologist*)

Physicians and other health-care providers have a critical role in preventing and treating sexually transmitted diseases (STDs). The following recommendations for the treatment of STDs, which were developed by the Centers for Disease Control and Prevention (CDC) in consultation with a group of outside experts, are intended to assist with that effort.

The recommendations, which update those released by CDC in 1993, were reprinted from CDC's *Morbidity and Mortality Weekly Report (MMWR) Recommendations and Reports*, Vol. 47, No. RR-1, January 23, 1998. This issue of the *Missouri Epidemiologist* contains the introduction and the sections of the guidelines which relate to clinical prevention guidelines, special populations, vaccine-preventable STDs and sexual assault. Those sections relating to diseases characterized by urethritis and cervicitis were reprinted in the January-February 1998 issue; to diseases characterized by genital ulcers and congenital syphilis in the March-April 1998 issue; to human immunodeficiency virus (HIV) infection and human papillomavirus (HPV) infection in the July-August 1998 issue; and to diseases characterized by vaginal discharge, pelvic inflammatory disease (PID), epididymitis, cervical cancer screening, proctitis, proctocolitis and enteritis, and ectoparasitic infections in the September-October 1998 issue.

A full copy of the guidelines and reference list in pdf format can be found on CDC's Division of STD Prevention Home Page at **http://www.cdc.gov/nchstp/dstd/dstdp.htm.**

Additional information for medical providers on STDs and STD training courses is available on the Internet at the following sites:

CDC's Division of STD Prevention:
http://www.cdc.gov/nchstp/dstd/dstdp.html

JAMA HIV/AIDS Information Center. HIV/AIDS Drug Information
http://www.ama-assn.org/special/hiv/treatmnt/druginfo/druginfo.htm

CDC's Division of HIV/AIDS Prevention:
http://www.cdc.gov/nchstp/hiv_aids/dhap.htm

CDC's Division of AIDS, STD, and TB Laboratory Research:
http://www.cdc.gov/ncidod/dastlr/dastlr.html

National Network of STD/HIV Prevention Training Centers:
http://129.137.232.101/STDPTC.html

St. Louis STD/HIV Prevention Training Center:
http://www.umsl.edu/services/itc/std_ptc.html
Ph: (314) 747-0294 or 747-1522

Medline - National Library of Medicine:
http://igm.nlm.nih.gov/

If you have questions regarding these guidelines, please contact DOH's Section of STD/HIV/AIDS Prevention and Care Services at (573) 751-6439.

Clinical Prevention Guidelines

The prevention and control of STDs is based on five major concepts: first, education of those at risk on ways to reduce the risk for STDs; second, detection of asymptomatically infected persons and of symptomatic persons unlikely to seek diagnostic and treatment services; third, effective diagnosis and treatment of infected persons; fourth, evaluation, treatment, and counseling of sex partners of persons who are infected with an STD; and fifth, preexposure vaccination of persons at risk for vaccine-preventable STDs. Although this report focuses primarily on the clinical aspects of STD control, prevention of STDs is based on changing the sexual behaviors that place persons at risk for infection. Moreover, because STD control activities reduce the likelihood of transmission to sex partners, prevention for individuals constitutes prevention for the community.

Clinicians have the opportunity to provide client education and counseling and to participate in identifying and treating infected sex partners in addition to interrupting transmission by treating persons who have the curable bacterial and parasitic STDs. The ability of the health-care provider to obtain an accurate sexual history is crucial in prevention and control efforts. Guidance in obtaining a sexual history is available in the chapter "Sexuality and Reproductive Health" in *Contraceptive Technology*, 16th edition (4). The accurate diagnosis and timely reporting of STDs by the clinician is the basis for effective public health surveillance.

PREVENTION MESSAGES

Preventing the spread of STDs requires that persons at risk for transmitting or acquiring infections change their behaviors. The essential first step is for the health-care provider to proactively include questions regarding the patient's sexual history as part of the clinical interview. When risk factors have been identified, the provider has an opportunity to deliver prevention messages. Counseling skills (i.e., respect, compassion, and a nonjudgmental attitude) are essential to the effective delivery of prevention messages. Techniques that can be effective in facilitating a rapport with the patient include using open-ended questions, using understandable language, and reassuring the patient that treatment will be provided regardless of considerations such as ability to pay, citizenship or immigration status, language spoken, or lifestyle.

Prevention messages should be tailored to the patient, with consideration given to the patient's specific risk factors for STDs. Messages should include a description of specific actions that the patient can take to avoid acquiring or transmitting STDs (e.g., abstinence from sexual activity if STD-related symptoms develop).

Sexual Transmission

The most effective way to prevent sexual transmission of HIV infection and other STDs is to avoid sexual intercourse with an infected partner. Counseling that provides information concerning abstinence from penetrative sexual intercourse is crucial for a) persons who are being treated for an STD or whose partners are undergoing treatment and b) persons who wish to avoid the possible consequences of sexual intercourse (e.g., STD/HIV and pregnancy). A more comprehensive discussion of abstinence is available in *Contraceptive Technology*, 16th edition (4).

- Both partners should get tested for STDs, including HIV, before initiating sexual intercourse.
- If a person chooses to have sexual intercourse with a partner whose infection status is unknown or who is infected with HIV or another STD, a new condom should be used for each act of intercourse.

Injecting-Drug Users

The following prevention messages are appropriate for injecting-drug users:

- Enroll or continue in a drug-treatment program.
- Do not, under any circumstances, use injection equipment (e.g., needles and syringes) that has been used by another person.
- If needles can be obtained legally in the community, obtain clean needles.
- Persons who continue to use injection equipment that has been used by other persons should first clean the equipment with bleach and water. (Disinfecting with bleach does not sterilize the equipment and does not guarantee that HIV is inactivated. However, for injecting-drug users, thoroughly and consistently cleaning injection equipment with bleach should reduce the rate of HIV transmission when equipment is shared.)

Preexposure Vaccination

Preexposure vaccination is one of the most effective methods used to prevent transmission of certain STDs. HBV infection frequently is sexually transmitted, and hepatitis B vaccination is recommended for all unvaccinated patients being evaluated for an STD. In the United States, hepatitis A vaccines from two manufacturers were licensed recently. Hepatitis A vaccination is recommended for several groups of patients who might seek treatment in STD clinics; such patients include homosexual or bisexual men and persons who use illegal drugs. Vaccine trials for other STDs are being conducted, and vaccines for these STDs may become available within the next several years.

PREVENTION METHODS

Male Condoms

When used consistently and correctly, condoms are effective in preventing many STDs, including HIV infection. Multiple cohort studies, including those of serodiscordant sex partners, have demonstrated a strong protective effect of condom use against HIV infection. Because condoms do not cover all exposed areas, they may be more effective in preventing infections transmitted between mucosal surfaces than those transmitted by skin-to-skin contact. Condoms are regulated as medical devices and are subject to random sampling and testing by the Food and Drug Administration (FDA). Each latex condom manufactured in the United States is tested electronically for holes before packaging. Rates of condom breakage during sexual intercourse and withdrawal are low in the United States (i.e., usually two broken condoms per 100 condoms used). Condom failure usually results from inconsistent or incorrect use rather than condom breakage.

Patients should be advised that condoms must be used consistently and correctly to be highly effective in preventing STDs. Patients also should be instructed in the correct use of condoms. The following recommendations ensure the proper use of male condoms:

- Use a new condom with each act of sexual intercourse.
- Carefully handle the condom to avoid damaging it with fingernails, teeth, or other sharp objects.
- Put the condom on after the penis is erect and before genital contact with the partner.
- Ensure that no air is trapped in the tip of the condom.
- Ensure that adequate lubrication exists during intercourse, possibly requiring the use of exogenous lubricants.
- Use only water-based lubricants (e.g., K-Y Jelly™, Astroglide™, AquaLube™, and glycerin) with latex condoms. Oil-based lubricants (e.g., petroleum jelly, shortening, mineral oil, massage oils, body lotions, and cooking oil) can weaken latex.
- Hold the condom firmly against the base of the penis during withdrawal, and withdraw while the penis is still erect to prevent slippage.

Female Condoms

Laboratory studies indicate that the female condom (Reality™)—a lubricated polyurethane sheath with a ring on each end that is inserted into the vagina—is an effective mechanical barrier to viruses, including HIV. Other than one investigation of recurrent trichomoniasis, no clinical studies have been completed to evaluate the efficacy of female condoms in providing protection from STDs, including HIV. If used consistently and correctly, the female condom should substantially reduce the risk for STDs. When a male condom cannot be used appropriately, sex partners should consider using a female condom.

Condoms and Spermicides

Whether condoms lubricated with spermicides are more effective than other lubricated condoms in protecting against the transmission of HIV and other STDs has not been determined. Furthermore, spermicide-coated condoms have been associated with *Escherichia coli* urinary tract infection in young women. Whether condoms used with vaginal application of spermicide are more effective than condoms used without vaginal spermicides also has not been determined. Therefore, the consistent use of condoms, with or without spermicidal lubricant or vaginal application of spermicide, is recommended.

Vaginal Spermicides, Sponges, and Diaphragms

As demonstrated in several randomized controlled trials, vaginal spermicides used alone without condoms reduce the risk for cervical gonorrhea and chlamydia. However, vaginal spermicides offer no protection against HIV infection, and spermicides are not recommended for HIV prevention. The vaginal contraceptive sponge, which is not available in the United States, protects against cervical gonorrhea and chlamydia, but its use increases the risk for candidiasis. In case-control and cross-sectional studies, diaphragm use has been demonstrated to protect against cervical gonorrhea, chlamydia, and trichomoniasis; however, no cohort studies have been conducted. Vaginal sponges or diaphragms should not be assumed to protect women against HIV infection. The role of spermicides, sponges, and diaphragms for preventing STDs in men has not been evaluated.

Nonbarrier Contraception, Surgical Sterilization, and Hysterectomy

Women who are not at risk for pregnancy might incorrectly perceive themselves to be at no risk for STDs, including HIV infection. Nonbarrier contraceptive methods offer no protection against HIV or other STDs. Hormonal contraception (e.g., oral contraceptives, Norplant™, and Depo-Provera™) has been associated in some cohort studies with cervical STDs and increased acquisition of HIV; however, data concerning this latter finding are inconsistent. Women who use hormonal contraception, have been surgically sterilized, or have had hysterectomies should be counseled regarding the use of condoms and the risk for STDs, including HIV infection.

HIV PREVENTION COUNSELING

Knowledge of HIV status and appropriate counseling are important components in initiating behavior change. Therefore, HIV counseling is an important HIV prevention strategy, although its efficacy in reducing risk behaviors is still being evaluated. By ensuring that counseling is empathic and client-centered, clinicians can develop a realistic appraisal of the patient's risk and help the patient develop a specific and realistic HIV prevention plan (5).

Counseling associated with HIV testing has two main components: pretest and posttest counseling. During pretest counseling, the clinician should conduct a personalized risk assessment, explain the meaning of positive and negative test results, ask for informed consent for the HIV test, and help the patient develop a realistic, personalized risk-reduction plan. During posttest counseling, the clinician should inform the patient of the results, review the meaning of the results, and reinforce prevention messages. If the patient has a confirmed positive HIV test result, posttest counseling should include referral for follow-up medical services and, if needed, social and psychological services. HIV-negative patients at continuing risk for HIV infection also may benefit from referral for additional counseling and prevention services.

PARTNER NOTIFICATION

For most STDs, partners of patients should be examined. When exposure to a treatable STD is considered likely, appropriate antimicrobials should be administered even though no clinical signs of infection are evident and laboratory test results are not yet available. In many states [including Missouri], the local or state health department can assist in notifying the partners of patients who have selected STDs (e.g., HIV infection, syphilis, gonorrhea, hepatitis B, and chlamydia).

Health-care providers should advise patients who have an STD to notify sex partners, including those without symptoms, of their exposure and encourage these partners to seek clinical evaluation. This type of partner notification is known as patient referral. In situations in which patient referral may not be effective or possible, health departments should be prepared to assist the patient either through contract referral or provider referral. Contract referral is the process by which patients agree to self-refer their partners within a defined time period. If the partners do not obtain medical evaluation and treatment within that period, then provider referral is implemented. Provider referral is the process by which partners named by infected patients are notified and counseled by health department staff.

Interrupting the transmission of infection is crucial to STD control. For treatable and vaccine-preventable STDs, further transmission and reinfection can be prevented by referral of sex partners for diagnosis, treatment, vaccination (if applicable), and counseling. When health-care providers refer infected patients to local or state health departments for provider-referral partner notification, the patients may be interviewed by trained professionals to obtain the names of their sex partners and information regarding the location of these partners for notification purposes. Every health

department protects the privacy of patients in partner-notification activities. Because of the advantage of confidentiality, many patients prefer that public health officials notify partners. However, the ability of public health officials to provide appropriate prophylaxis to contacts of all patients who have STDs may be limited. In situations where the number of anonymous partners is substantial (e.g., situations among persons who exchange sex for drugs), targeted screening of persons at risk may be more effective at stopping the transmission of disease than provider-referral partner notification. Guidelines for management of sex partners and recommendations for partner notification for specific STDs are included for each STD addressed in this report.

REPORTING AND CONFIDENTIALITY

The accurate identification and timely reporting of STDs are integral components of successful disease control efforts. Timely reporting is important for assessing morbidity trends, targeting limited resources, and assisting local health authorities in identifying sex partners who may be infected. STD/HIV and acquired immunodeficiency syndrome (AIDS) cases should be reported in accordance with local statutory requirements.

Syphilis, gonorrhea, and AIDS are reportable diseases in every state. Chlamydial infection is reportable in most states [including Missouri]. The requirements for reporting other STDs differ by state, and clinicians should be familiar with local STD reporting requirements. Reporting may be provider- and/or laboratory-based [both are required in Missouri]. Clinicians who are unsure of local reporting requirements should seek advice from local health departments or state STD programs [in Missouri, call the Section of STD/HIV/AIDS Prevention and Care Services at (573) 751-6141].

STD and HIV reports are maintained in strictest confidence; in most jurisdictions, such reports are protected by statute from subpoena. Before public health representatives conduct follow-up of a positive STD-test result, these persons should consult the patient's health-care provider to verify the diagnosis and treatment.

Special Populations

PREGNANT WOMEN

Intrauterine or perinatally transmitted STDs can have fatal or severely debilitating effects on a fetus. Pregnant women and their sex partners should be questioned about STDs and should be counseled about the possibility of perinatal infections.

Recommended Screening Tests

- A serologic test for syphilis should be performed on all pregnant women at the first prenatal visit. In populations in which utilization of prenatal care is not optimal, rapid plasma reagin (RPR)-card test screening and treatment, if that test is reactive, should be performed at the time a pregnancy is diagnosed. For patients at high risk, screening should be repeated in the third trimester and again at delivery. Some states also mandate screening all women at delivery. No infant should be discharged from the hospital without the syphilis serologic status of its mother having been determined at least one time during pregnancy and, preferably, again at delivery. Any woman who delivers a stillborn infant should be tested for syphilis.
- A serologic test for hepatitis B surface antigen (HBsAg) should be performed for all pregnant women at the first prenatal visit. HBsAg testing should be repeated late in the pregnancy for women who are HBsAg negative but who are at high risk for HBV infection (e.g., injecting-drug users and women who have concomitant STDs).
- A test for *Neisseria gonorrhoeae* should be performed at the first prenatal visit for women at risk or for women living in an area in which the prevalence of *N. gonorrhoeae* is high. A repeat test should be performed during the third trimester for those at continued risk.
- A test for *Chlamydia trachomatis* should be performed in the third trimester for women at increased risk (i.e., women aged <25 years and women who have a new or more than one sex partner or whose partner has other partners) to prevent maternal postnatal complications and chlamydial infection in the infant. Screening during the first trimester might enable prevention of adverse effects of chlamydia during pregnancy. However, evidence for adverse effects during pregnancy is minimal. If screening is performed only during the first trimester, a longer period exists for acquiring infection before delivery.

- A test for HIV infection should be offered to all pregnant women at the first prenatal visit.
- A test for bacterial vaginosis (BV) may be conducted early in the second trimester for asymptomatic patients who are at high risk for preterm labor (e.g., those who have a history of a previous preterm delivery). Current evidence does not support universal testing for BV.
- A Papanicolaou (Pap) smear should be obtained at the first prenatal visit if none has been documented during the preceding year.

Other Concerns

Other STD-related concerns are to be considered as follows:

- Pregnant women who have either primary genital herpes infection, HBV, primary cytomegalovirus (CMV) infection, or Group B streptococcal infection and women who have syphilis and who are allergic to penicillin may need to be referred to an expert for management.
- HBsAg-positive pregnant women should be reported to the local and/or state health department to ensure that they are entered into a case-management system and appropriate prophylaxis is provided for their infants. In addition, household and sexual contacts of HBsAg-positive women should be vaccinated.
- In the absence of lesions during the third trimester, routine serial cultures for herpes simplex virus (HSV) are not indicated for women who have a history of recurrent genital herpes. However, obtaining cultures from such women at the time of delivery may be useful in guiding neonatal management. Prophylactic cesarean section is not indicated for women who do not have active genital lesions at the time of delivery.
- The presence of genital warts is not an indication for cesarean section.

For a more detailed discussion of these guidelines, as well as for infections not transmitted sexually, refer to *Guidelines for Perinatal Care* (6).

NOTE: The sources for these guidelines for screening of pregnant women include the *Guide to Clinical Preventive Services* (7), *Guidelines for Perinatal Care* (6), *American College of Obstetricians and Gynecologists (ACOG) Technical Bulletin: Gonorrhea and Chlamydial Infections* (8), "Recommendations for the Prevention and Management of *Chlamydia trachomatis* Infections" (9), and "Hepatitis B Virus: A Comprehensive Strategy for Eliminating Transmission in the United States through Universal Childhood Vaccination—Recommendations of the Immunization Practices Advisory Committee (ACIP)" (1). These sources are not entirely compatible in their recommendations. The *Guide to Clinical Preventive Services* recommends screening of patients at high risk for chlamydia, but indicates that the optimal timing for screening is uncertain. The *Guidelines for Perinatal Care* recommend that pregnant women at high risk for chlamydia be screened for the infection during the first prenatal-care visit and during the third trimester. Recommendations to screen pregnant women for STDs are based on disease severity and sequelae, prevalence in the population, costs, medicolegal considerations (e.g., state laws), and other factors. The screening recommendations in this report are more extensive (i.e., if followed, more women will be screened for more STDs than would be screened by following other recommendations) and are compatible with other CDC guidelines. Physicians should select a screening strategy that is compatible with the population and setting of their medical practices and that meets their goals for STD case detection and treatment.

ADOLESCENTS

Health-care providers who provide care for adolescents should be aware of several issues that relate specifically to these persons. The rates of many STDs are highest among adolescents (e.g., the rate of gonorrhea is highest among females aged 15–19 years). Clinic-based studies have demonstrated that the prevalence of chlamydial infections, and possibly of human papillomavirus (HPV) infections, also is highest among adolescents. In addition, surveillance data indicate that 9% of adolescents who have acute HBV infection either a) have had sexual contact with a chronically infected person or with multiple sex partners or b) gave their sexual preference as homosexual. As part of a comprehensive strategy to eliminate HBV transmission in the United States, ACIP has recommended that all children be administered hepatitis B vaccine.

Adolescents who are at high risk for STDs include male homosexuals, sexually active heterosexuals, clients in STD clinics, and injecting-drug users. Younger adolescents (i.e., persons aged <15 years) who are sexually active are at particular risk for infection. Adolescents are at greatest risk for STDs because they frequently have unprotected intercourse, are biologically more susceptible to infection, and face multiple obstacles to utilization of health care.

Several of these issues can be addressed by clinicians who provide services to adolescents. Clinicians can address the general lack of knowledge and awareness about the risks and consequences of STDs and offer guidance, constituting true primary prevention, to help adolescents develop healthy sexual behaviors and prevent the establishment of patterns of behavior that can undermine sexual health. With limited exceptions, all adolescents in

the United States can consent to the confidential diagnosis and treatment of STDs. Medical care for STDs can be provided to adolescents without parental consent or knowledge. Furthermore, in many states adolescents can consent to HIV counseling and testing. Consent laws for vaccination of adolescents differ by state. Several states consider provision of vaccine similar to treatment of STDs and provide vaccination services without parental consent. Providers should appreciate how important confidentiality is to adolescents and should strive to follow policies that comply with state laws to ensure the confidentiality of STD-related services provided to adolescents.

The style and content of counseling and health education should be adapted for adolescents. Discussions should be appropriate for the patient's developmental level and should identify risky behaviors, such as sex and drug-use behaviors. Careful counseling and thorough discussions are especially important for adolescents who may not acknowledge engaging in high-risk behaviors. Care and counseling should be direct and nonjudgmental.

CHILDREN

Management of children who have STDs requires close cooperation between the clinician, laboratorians, and child-protection authorities. Investigations, when indicated, should be initiated promptly. Some diseases (e.g., gonorrhea, syphilis, and chlamydia), if acquired after the neonatal period, are almost 100% indicative of sexual contact. For other diseases, such as HPV infection and vaginitis, the association with sexual contact is not as clear (see Sexual Assault and STDs) [also, see "Reporting Child Abuse and Neglect in Missouri," which begins on page 25].

Management of Patients Who Have a History of Penicillin Allergy

No proven alternatives to penicillin are available for treating neurosyphilis, congenital syphilis, or syphilis in pregnant women. Penicillin also is recommended for use, whenever possible, in HIV-infected patients. Of the adult U.S. population, 3%–10% have experienced urticaria, angioedema, or anaphylaxis (i.e., upper airway obstruction, bronchospasm, or hypotension) after penicillin therapy. Readministration of penicillin to these patients can cause severe, immediate reactions. Because anaphylactic reactions to penicillin can be fatal, every effort should be made to avoid administering penicillin to penicillin-allergic patients, unless the anaphylactic sensitivity has been removed by acute desensitization.

An estimated 10% of persons who report a history of severe allergic reactions to penicillin are still allergic. With the passage of time after an allergic reaction to penicillin, most persons who have had a severe reaction stop expressing penicillin-specific IgE. These persons can be treated safely with penicillin. The results of many investigations indicate that skin testing with the major and minor determinants can reliably identify persons at high risk for penicillin reactions. Although these reagents are easily generated and have been available in academic centers for >30 years, only benzylpenicilloyl poly-L-lysine (Pre-Pen, the major determinant) and penicillin G are available commercially. Experts estimate that testing with only the major determinant and penicillin G identifies 90%–97% of the currently allergic patients. However, because skin testing without the minor determinants would still miss 3%–10% of allergic patients, and serious or fatal reactions can occur among these minor-determinant–positive patients, experts suggest caution when the full battery of skin-test reagents is not available. See Table 1 on the next page.

RECOMMENDATIONS

If the full battery of skin-test reagents is available, including the major and minor determinants (see Penicillin Allergy Skin Testing), patients who report a history of penicillin reaction and are skin-test negative can receive conventional penicillin therapy. Skin-test–positive patients should be desensitized.

If the full battery of skin-test reagents, including the minor determinants, is not available, the patient should be skin tested using benzylpenicilloyl poly-L-lysine (i.e., the major determinant, Pre-Pen) and penicillin G. Patients who have positive test results should be desensitized. Some experts believe that persons who have negative test results should be regarded as probably allergic and should be desensitized. Others suggest that those with negative skin-test results

can be test-dosed gradually with oral penicillin in a monitored setting in which treatment for anaphylactic reaction is possible.

TABLE 1. Oral desensitization protocol for patients with a positive skin test*

Penicillin V suspension dose†	Amount§ (units/mL)	mL	Units	Cumulative dose (units)
1	1,000	0.1	100	100
2	1,000	0.2	200	300
3	1,000	0.4	400	700
4	1,000	0.8	800	1,500
5	1,000	1.6	1,600	3,100
6	1,000	3.2	3,200	6,300
7	1,000	6.4	6,400	12,700
8	10,000	1.2	12,000	24,700
9	10,000	2.4	24,000	48,700
10	10,000	4.8	48,000	96,700
11	80,000	1.0	80,000	176,700
12	80,000	2.0	160,000	336,700
13	80,000	4.0	320,000	656,700
14	80,000	8.0	640,000	1,296,700

Observation period: 30 minutes before parenteral administration of penicillin.

*Reprinted with permission from the *New England Journal of Medicine* (24).
†Interval between doses, 15 minutes; elapsed time, 3 hours and 45 minutes; cumulative dose, 1.3 million units.
§The specific amount of drug was diluted in approximately 30 mL of water and then administered orally.

PENICILLIN ALLERGY SKIN TESTING

Patients at high risk for anaphylaxis (i.e., those who have a history of penicillin-related anaphylaxis, asthma, or other diseases that would make anaphylaxis more dangerous or who are being treated with beta-adrenergic blocking agents) should be tested with 100-fold dilutions of the full-strength skin-test reagents before being tested with full-strength reagents. In these situations, patients should be tested in a monitored setting in which treatment for an anaphylactic reaction is available. If possible, the patient should not have taken antihistamines recently (e.g., chlorpheniramine maleate or terfenadine during the preceding 24 hours, diphenhydramine HCl or hydroxyzine during the preceding 4 days, or astemizole during the preceding 3 weeks).

Reagents (Adapted from Beall [25])*

Major Determinant

- Benzylpenicilloyl poly-L-lysine (Pre-Pen [Taylor Pharmacal Company, Decatur, Illinois]) ($6x10^{-5}$M).

Minor Determinant Precursors†

- Benzylpenicillin G (10^{-2}M, 3.3 mg/mL, 6000 units/mL),
- Benzylpenicilloate (10^{-2}M, 3.3 mg/mL),
- Benzylpenilloate (or penicilloyl propylamine) (10^{-2}M, 3.3 mg/mL).

Positive Control

- Commercial histamine for epicutaneous skin testing (1 mg/mL).

* Reprinted with permission from G.N. Beall in *Annals of Internal Medicine* (25).
† Aged penicillin is not an adequate source of minor determinants. Penicillin G should be freshly prepared or should come from a fresh-frozen source.

Negative Control

- Diluent used to dissolve other reagents, usually phenol saline.

Procedures

Dilute the antigens a) 100-fold for preliminary testing if the patient has had a life-threatening reaction to penicillin or b) 10-fold if the patient has had another type of immediate, generalized reaction to penicillin within the preceding year.

Epicutaneous (prick) tests. Duplicate drops of skin-test reagent are placed on the volar surface of the forearm. The underlying epidermis is pierced with a 26-gauge needle without drawing blood.

An epicutaneous test is positive if the average wheal diameter after 15 minutes is 4 mm larger than that of negative controls; otherwise, the test is negative. The histamine controls should be positive to ensure that results are not falsely negative because of the effect of antihistaminic drugs.

Intradermal tests. If epicutaneous tests are negative, duplicate 0.02 mL intradermal injections of negative control and antigen solutions are made into the volar surface of the forearm using a 26- or 27-gauge needle on a syringe. The crossed diameters of the wheals induced by the injections should be recorded.

An intradermal test is positive if the average wheal diameter 15 minutes after injection is ≥2 mm larger than the initial wheal size and also is ≥2 mm larger than the negative controls. Otherwise, the tests are negative.

DESENSITIZATION

Patients who have a positive skin test to one of the penicillin determinants can be desensitized. This is a straightforward, relatively safe procedure that can be done orally or IV. Although the two approaches have not been compared, oral desensitization is regarded as safer to use and easier to perform. Patients should be desensitized in a hospital setting because serious IgE-mediated allergic reactions, although unlikely, can occur. Desensitization usually can be completed in approximately 4 hours, after which the first dose of penicillin is given (Table 1). STD programs should have a referral center where patients who have positive skin test results can be desensitized. After desensitization, patients must be maintained on penicillin continuously for the duration of the course of therapy.

Vaccine-Preventable STDs

One of the most effective means of preventing the transmission of STDs is preexposure immunization. Currently licensed vaccines for the prevention of STDs include those for hepatitis A and hepatitis B. Clinical development and trials are underway for vaccines against a number of other STDs, including HIV and HSV. As more vaccines become available, immunization possibly will become one of the most widespread methods used to prevent STDs.

Five different viruses (i.e., hepatitis A–E) account for almost all cases of viral hepatitis in humans. Serologic testing is necessary to confirm the diagnosis. For example, a health-care provider might assume that an injecting-drug user with jaundice has hepatitis B when, in fact, outbreaks of hepatitis A among injecting-drug users often occur. The correct diagnosis is essential for the delivery of appropriate preventive services. To ensure accurate reporting of viral hepatitis and appropriate prophylaxis of household contacts and sex partners, all case reports of viral hepatitis should be investigated and the etiology established through serologic testing.

HEPATITIS A

Hepatitis A is caused by infection with the hepatitis A virus (HAV). HAV replicates in the liver and is shed in the feces. Virus in the stool is found in the highest concentrations from 2 weeks before to 1 week after the onset of clinical illness. Virus also is present in serum and saliva during this period, although in much lower concentrations than in feces. The most common mode of HAV transmission is fecal-oral, either by person-to-person transmission between household contacts or sex partners or by contaminated food or water. Because viremia occurs in acute infection, bloodborne HAV

transmission can occur; however, such cases have been reported infrequently. Although HAV is present in low concentrations in the saliva of infected persons, no evidence indicates that saliva is involved in transmission.

Of patients who have acute hepatitis A, ≤20% require hospitalization; fulminant liver failure develops in 0.1% of patients. The overall mortality rate for acute hepatitis A is 0.3%, but it is higher (1.8%) for adults aged >49 years. HAV infection is not associated with chronic liver disease.

In the United States during 1995, 31,582 cases of hepatitis A were reported. The most frequently reported source of infection was household or sexual contact with a person who had hepatitis A, followed by attendance or employment at a day care center; recent international travel; homosexual activity; injecting-drug use; and a suspected food or waterborne outbreak. Many persons who have hepatitis A do not identify risk factors; their source of infection may be other infected persons who are asymptomatic. The prevalence of previous HAV infection among the U.S. population is 33% (CDC, unpublished data).

Outbreaks of hepatitis A among homosexual men have been reported in urban areas, both in the United States and in foreign countries. In one investigation, the prevalence of HAV infection among homosexual men was significantly higher (30%) than that among heterosexual men (12%). In New York City, a case-control study of homosexual men who had acute hepatitis A determined that case-patients were more likely to have had more anonymous sex partners and to have engaged in group sex than were the control subjects; oral-anal intercourse (i.e., the oral role) and digital-rectal intercourse (i.e., the digital role) also were associated with illness.

Treatment

Because HAV infection is self-limited and does not result in chronic infection or chronic liver disease, treatment is usually supportive. Hospitalization may be necessary for patients who are dehydrated because of nausea and vomiting or who have fulminant hepatitis A. Medications that might cause liver damage or that are metabolized by the liver should be used with caution. No specific diet or activity restrictions are necessary.

Prevention

General measures for hepatitis A prevention (e.g., maintenance of good personal hygiene) have not been successful in interrupting outbreaks of hepatitis A when the mode of transmission is from person to person, including sexual contact. To help control hepatitis A outbreaks among homosexual and bisexual men, health education messages should stress the modes of HAV transmission and the measures that can be taken to reduce the risk for transmission of any STD, including enterically transmitted agents such as HAV. However, vaccination is the most effective means of preventing HAV infection.

Two types of products are available for the prevention of hepatitis A: immune globulin (IG) and hepatitis A vaccine. IG is a solution of antibodies prepared from human plasma that is made with a serial ethanol precipitation procedure that inactivates HBV and HIV. When administered intramuscularly before exposure to HAV, or within 2 weeks after exposure, IG is >85% effective in preventing hepatitis A. IG administration is recommended for a variety of exposure situations (e.g., for persons who have sexual or household contact with patients who have hepatitis A). The duration of protection is relatively short (i.e., 3–6 months) and dose dependent.

Inactivated hepatitis A vaccines have been available in the United States since 1995. These vaccines, administered as a two-dose series, are safe, highly immunogenic, and efficacious. Immunogenicity studies indicate that 99%–100% of persons respond to one dose of hepatitis A vaccine; the second dose provides long-term protection. Efficacy studies indicate that inactivated hepatitis A vaccines are 94%–100% effective in preventing HAV infection (2).

Preexposure Prophylaxis

Vaccination with hepatitis A vaccine for preexposure protection against HAV infection is indicated for persons who have the following risk factors and who are likely to seek treatment in settings where STDs are being treated.

- **Men who have sex with men.** Sexually active men who have sex with men (both adolescents and adults) should be vaccinated.
- **Illegal drug users.** Vaccination is recommended for users of illegal injecting and noninjecting drugs if local epidemiologic evidence indicates previous or current outbreaks among persons with such risk behaviors.

Postexposure Prophylaxis

Persons who were exposed recently to HAV (i.e., household or sexual contact with a person who has hepatitis A) and who had not been vaccinated before the exposure should be administered a single IM dose of IG (0.02 mL/kg) as soon as possible, but not >2 weeks after exposure. Persons who received at least one dose of hepatitis A vaccine ≥1 month before exposure to HAV do not need IG.

HEPATITIS B

Hepatitis B is a common STD. During the past 10 years, sexual transmission accounted for approximately 30%–60% of the estimated 240,000 new HBV infections that occurred annually in the United States. Chronic HBV infection develops in 1%– 6% of persons infected as adults. These persons are capable of transmitting HBV to others, and they are at risk for chronic liver disease. In the United States, HBV infection leads to an estimated 6,000 deaths annually; these deaths result from cirrhosis of the liver and primary hepatocellular carcinoma.

The risk for perinatal HBV infection among infants born to HBV-infected mothers is 10%–85%, depending on the mother's hepatitis B e antigen (HbeAg) status. Chronic HBV infection develops in approximately 90% of infected newborns; these children are at high risk for chronic liver disease. Even when not infected during the perinatal period, children of HBV-infected mothers are at high risk for acquiring chronic HBV infection by person-to-person transmission during the first 5 years of life.

Treatment

No specific treatment is available for persons who have acute HBV infection. Supportive and symptomatic care usually are the mainstays of therapy. During the past decade, numerous antiviral agents have been investigated for treatment of chronic HBV infection. Alpha-2b interferon has been 40% effective in eliminating chronic HBV infection; persons who became infected during adulthood were most likely to respond to this treatment. Antiretroviral agents (e.g., lamivudine) have been effective in eliminating HBV infection, and a number of other compounds are being evaluated. The goal of antiviral treatment is to stop HBV replication. Response to treatment can be demonstrated by normalization of liver function tests, improvement in liver histology, and seroreversion from HBeAg-positive to HBeAg-negative. Long-term follow-up of treated patients suggests that the remission of chronic hepatitis induced by alpha interferon is of long duration. Patient characteristics associated with positive response to interferon therapy include low pretherapy HBV DNA levels, high pretherapy alanine aminotransferase levels, short duration of infection, acquisition of disease in adulthood, active histology, and female sex.

Prevention

Although methods used to prevent other STDs should prevent HBV infection, hepatitis B vaccination is the most effective means of preventing infection. The epidemiology of HBV infection in the United States indicates that multiple age groups must be targeted to provide widespread immunity and effectively prevent HBV transmission and HBV-related chronic liver disease (1). Vaccination of persons who have a history of STDs is part of a comprehensive strategy to eliminate HBV transmission in the United States. This comprehensive strategy also includes prevention of perinatal HBV infection by a) routine screening of all pregnant women, b) routine vaccination of all newborns, c) vaccination of older children at high risk for HBV infection (e.g., Alaskan Natives, Pacific Islanders, and residents in households of first-generation immigrants from countries in which HBV is of high or intermediate endemicity), d) vaccination of children aged 11–12 years who have not previously received hepatitis B vaccine, and e) vaccination of adolescents and adults at high risk for infection.

Preexposure Prophylaxis

With the implementation of routine infant hepatitis B vaccination and the wide-scale implementation of vaccination programs for adolescents, vaccination of adults at high risk for HBV has become a priority in the strategy to eliminate HBV transmission in the United States. All persons attending STD clinics and persons known to be at high risk for HBV infection (e.g., persons with multiple sex partners, sex partners of persons with chronic HBV infection, and injecting-drug users) should be offered hepatitis B vaccine and advised of their risk for HBV infection (as well as their risk for HIV infection) and the means to reduce their risk (i.e., exclusivity in sexual relationships, use of condoms, and avoidance of nonsterile drug-injection equipment).

Persons who should receive hepatitis B vaccine include the following:

- Sexually active homosexual and bisexual men;
- Sexually active heterosexual men and women, including those
  a) in whom another STD was recently diagnosed,
  b) who had more than one sex partner in the preceding 6 months,
  c) who received treatment in an STD clinic, and
  d) who are prostitutes;
- Illegal drug users, including injecting drug users and users of illegal noninjecting drugs;
- Health-care workers;
- Recipients of certain blood products;
- Household and sexual contacts of persons who have chronic HBV infection;
- Adoptees from countries in which HBV infection is endemic;
- Certain international travelers;
- Clients and employees of facilities for the developmentally disabled;
- Infants and children; and
- Hemodialysis patients.

Screening for Antibody Versus Vaccination Without Screening

The prevalence of previous HBV infection among sexually active homosexual men and among injecting-drug users is high. Serologic screening for evidence of previous infection before vaccinating adult members of these groups may be cost-effective, depending on the costs of laboratory testing and vaccine. At the current cost of vaccine, prevaccination testing on adolescents is not cost-effective. For adults attending STD clinics, the prevalence of HBV infection and the vaccine cost may justify prevaccination testing. However, because prevaccination testing may lower compliance with vaccination, the first dose of vaccine should be administered at the time of testing. The additional doses of hepatitis vaccine should be administered on the basis of the prevaccination test results. The preferred serologic test for prevaccination testing is the total antibody to hepatitis B core antigen (anti-HBc), because it will detect persons who have either resolved or chronic infection. Because anti-HBc testing will not identify persons immune to HBV infection as a result of vaccination, a history of hepatitis B vaccination should be obtained, and fully vaccinated persons should not be revaccinated.

Vaccination Schedules

Hepatitis B vaccine is highly immunogenic. Protective levels of antibody are present in approximately 50% of young adults after one dose of vaccine; in 85%, after two doses; and >90%, after three doses. The third dose is required to provide long-term immunity. The most often used schedule is vaccination at 0, 1–2, and 4–6 months. The first and second doses of vaccine must be administered at least 1 month apart, and the first and third doses at least 4 months apart. If the vaccination series is interrupted after the first or second dose of vaccine, the missing dose should be administered as soon as possible. The series should not be restarted if a dose has been missed. The vaccine should be administered IM in the deltoid, not in the buttock.

Postexposure Prophylaxis

Exposure to Persons Who Have Acute Hepatitis B

Sexual Contacts

Patients who have acute HBV infection are potentially infectious to persons with whom they have sexual contact. Passive immunization with hepatitis B immune globulin (HBIG) prevents 75% of these infections. Hepatitis B vaccination alone is less effective in preventing infection than HBIG and vaccination. Sexual contacts of patients who have acute hepatitis B should receive HBIG and begin the hepatitis B vaccine series within 14 days after the most recent sexual contact. Testing of sex partners for susceptibility to HBV infection (anti-HBc) can be considered if it does not delay treatment >14 days.

Nonsexual Household Contacts

Nonsexual household contacts of patients who have acute hepatitis B are not at high risk for infection unless they are exposed to the patient's blood (e.g., by sharing a toothbrush or razor blade). However, vaccination of household contacts is encouraged, especially for children and adolescents. If the patient remains HBsAg-positive after 6 months (i.e., becomes chronically infected), all household contacts should be vaccinated.

Exposure to Persons Who Have Chronic HBV Infection

Hepatitis B vaccination without the use of HBIG is highly effective in preventing HBV infection in household and sexual contacts of persons who have chronic HBV infection, and all such contacts should be vaccinated. Postvaccination serologic testing is indicated for sex partners of persons who have chronic hepatitis B infections and for infants born to HBsAg-positive women.

Special Considerations

Pregnancy

Pregnancy is not a contraindication to hepatitis B vaccine or HBIG vaccine administration.

HIV Infection

HBV infection in HIV-infected persons is more likely to lead to chronic HBV infection. HIV infection also can impair the response to hepatitis B vaccine. Therefore, HIV-infected persons who are vaccinated should be tested for hepatitis B surface antibody 1–2 months after the third vaccine dose. Revaccination with three more doses should be considered for those who do not respond initially to vaccination. Those who do not respond to additional doses should be advised that they might remain susceptible to HBV infection.

Sexual Assualt and STDs

ADULTS AND ADOLESCENTS

The recommendations in this report are limited to the identification and treatment of sexually transmitted infections and conditions commonly identified in the management of such infections. The documentation of findings and collection of nonmicrobiologic specimens for forensic purposes and the management of potential pregnancy or physical and psychological trauma are not included. Among sexually active adults, the identification of sexually transmitted infections after an assault is usually more important for the psychological and medical management of the patient than for legal purposes, because the infection could have been acquired before the assault.

Trichomoniasis, BV, chlamydia, and gonorrhea are the most frequently diagnosed infections among women who have been sexually assaulted. Because the prevalence of these STDs is substantial among sexually active women, the presence of these infections after an assault does not necessarily signify acquisition during the assault. Chlamydial and gonococcal infections in women are of special concern because of the possibility of ascending infection. In addition, HBV infection, if transmitted to a woman during an assault, can be prevented by post-exposure administration of hepatitis B vaccine.

Evaluation for Sexually Transmitted Infections

Initial Examination

An initial examination should include the following procedures:

- Cultures for *N. gonorrhoeae* and *C. trachomatis* from specimens collected from any sites of penetration or attempted penetration.
- If chlamydial culture is not available, nonculture tests, particularly the nucleic acid amplification tests, are an acceptable substitute. Nucleic acid amplification tests offer advantages of increased sensitivity if confirmation is available. If a nonculture test is used, a positive test result should be verified with a second test based on a different

diagnostic principle. EIA and direct fluorescent antibody are not acceptable alternatives, because false-negative test results occur more often with these nonculture tests, and false-positive test results may occur.

- Wet mount and culture of a vaginal swab specimen for *T. vaginalis* infection. If vaginal discharge or malodor is evident, the wet mount also should be examined for evidence of BV and yeast infection.
- Collection of a serum sample for immediate evaluation for HIV, hepatitis B, and syphilis (see Prophylaxis, Risk for Acquiring HIV Infection and Follow-Up Examination 12 Weeks After Assault).

Follow-Up Examinations

Although it is often difficult for persons to comply with follow-up examinations weeks after an assault, such examinations are essential a) to detect new infections acquired during or after the assault; b) to complete hepatitis B immunization, if indicated; and c) to complete counseling and treatment for other STDs. For these reasons, it is recommended that assault victims be reevaluated at follow-up examinations.

Follow-Up Examination After Assault

Examination for STDs should be repeated 2 weeks after the assault. Because infectious agents acquired through assault may not have produced sufficient concentrations of organisms to result in positive test results at the initial examination, a culture (or cultures), a wet mount, and other tests should be repeated at the 2-week follow-up visit unless prophylactic treatment has already been provided.

Serologic tests for syphilis and HIV infection should be repeated 6, 12, and 24 weeks after the assault if initial test results were negative.

Prophylaxis

Many experts recommend routine preventive therapy after a sexual assault. Most patients probably benefit from prophylaxis because the follow-up of patients who have been sexually assaulted can be difficult, and they may be reassured if offered treatment or prophylaxis for possible infection. The following prophylactic regimen is suggested as preventive therapy:

- Postexposure hepatitis B vaccination (without HBIG) should adequately protect against HBV. Hepatitis B vaccine should be administered to victims of sexual assault at the time of the initial examination. Follow-up doses of vaccine should be administered 1–2 and 4–6 months after the first dose.
- An empiric antimicrobial regimen for chlamydia, gonorrhea, trichomonas, and BV should be administered.

Recommended Regimen

Ceftriaxone 125 mg IM in a single dose,

PLUS

Metronidazole 2 g orally in a single dose,

PLUS

Azithromycin 1 g orally in a single dose or **Doxycycline** 100 mg orally twice a day for 7 days.

NOTE: For patients requiring alternative treatments, see the sections in this report that specifically address those agents.

The efficacy of these regimens in preventing gonorrhea, BV, or *C. trachomatis* genitourinary infections after sexual assault has not been evaluated. The clinician might consider counseling the patient regarding the possible benefits, as well as the possibility of toxicity, associated with these treatment regimens, because of possible gastrointestinal side effects with this combination.

Other Management Considerations

At the initial examination and, if indicated, at follow-up examinations, patients should be counseled regarding the following:

- Symptoms of STDs and the need for immediate examination if symptoms occur, and
- Abstinence from sexual intercourse until STD prophylactic treatment is completed.

Risk for Acquiring HIV Infection

Although HIV-antibody seroconversion has been reported among persons whose only known risk factor was sexual assault or sexual abuse, the risk for acquiring HIV infection through sexual assault is low. The overall probability of HIV transmission from an HIV-infected person during a single act of intercourse depends on many factors. These factors may include the type of sexual intercourse (i.e., oral, vaginal, or anal); presence of oral, vaginal or anal trauma; site of exposure to ejaculate; viral load in ejaculate; and presence of an STD.

In certain circumstances, the likelihood of HIV transmission also may be affected by postexposure therapy for HIV with antiretroviral agents. Postexposure therapy with zidovudine has been associated with a reduced risk for HIV infection in a study of health-care workers who had percutaneous exposures to HIV-infected blood. On the basis of these results and the biologic plausibility of the effectiveness of antiretroviral agents in preventing infection, postexposure therapy has been recommended for health-care workers who have percutaneous exposures to HIV. However, whether these findings can be extrapolated to other HIV-exposure situations, including sexual assault, is unknown. A recommendation cannot be made, on the basis of available information, regarding the appropriateness of postexposure antiretroviral therapy after sexual exposure to HIV.

Health-care providers who consider offering postexposure therapy should take into account the likelihood of exposure to HIV, the potential benefits and risks of such therapy, and the interval between the exposure and initiation of therapy. Because timely determination of the HIV-infection status of the assailant is not possible in many sexual assaults, the health-care provider should assess the nature of the assault, any available information about HIV-risk behaviors exhibited by persons who are sexual assailants (e.g., high-risk sexual practices and injecting-drug or crack cocaine use), and the local epidemiology of HIV/AIDS. If antiretroviral postexposure prophylaxis is offered, the following information should be discussed with the patient: a) the unknown efficacy and known toxicities of antiretrovirals, b) the critical need for frequent dosing of medications, c) the close follow-up that is necessary, d) the importance of strict compliance with the recommended therapy, and e) the necessity of immediate initiation of treatment for maximal likelihood of effectiveness. If the patient decides to take postexposure therapy, clinical management of the patient should be implemented according to the guidelines for occupational mucous membrane exposure.

SEXUAL ASSAULT OR ABUSE OF CHILDREN

Recommendations in this report are limited to the identification and treatment of STDs. Management of the psychosocial aspects of the sexual assault or abuse of children is important but is not included in these recommendations.

The identification of sexually transmissible agents in children beyond the neonatal period suggests sexual abuse. However, there are exceptions; for example, rectal or genital infection with *C. trachomatis* among young children may be the result of perinatally acquired infection and may persist for as long as 3 years. In addition, genital warts, BV, and genital mycoplasmas have been diagnosed in children who have been abused and in those not abused. There are several modes by which HBV is transmitted to children; the most common of these is household exposure to persons who have chronic HBV infection.

The possibility of sexual abuse should be considered if no obvious risk factor for infection can be identified. When the only evidence of sexual abuse is the isolation of an organism or the detection of antibodies to a sexually transmissible agent, findings should be confirmed and the implications considered carefully. The evaluation for determining whether sexual abuse has occurred among children who have infections that can be sexually transmitted should be conducted in compliance with expert recommendations by practitioners who have experience and training in the evaluation of abused or assaulted children (29).

Evaluation for Sexually Transmitted Infections

Examinations of children for sexual assault or abuse should be conducted so as to minimize pain and trauma to the child. The decision to evaluate the child for STDs must be made on an individual basis. Situations involving a high risk for STDs and a strong indication for testing include the following:

- A suspected offender is known to have an STD or to be at high risk for STDs (e.g., has multiple sex partners or a history of STD).
- The child has symptoms or signs of an STD or of an infection that can be sexually transmitted.

- The prevalence of STDs in the community is high. Other indications recommended by experts include a) evidence of genital or oral penetration or ejaculation or b) STDs in siblings or other children or adults in the household. If a child has symptoms, signs, or evidence of an infection that might be sexually transmitted, the child should be tested for other common STDs. Obtaining the indicated specimens requires skill to avoid psychological and physical trauma to the child. The clinical manifestations of some STDs are different among children in comparison with adults. Examinations and specimen collections should be conducted by practitioners who have experience and training in the evaluation of abused or assaulted children.

A principal purpose of the examination is to obtain evidence of an infection that is likely to have been sexually transmitted. However, because of the legal and psychosocial consequences of a false-positive diagnosis, only tests with high specificities should be used. The additional cost of such tests and the time required to conduct them are justified.

The scheduling of examinations should depend on the history of assault or abuse. If the initial exposure was recent, the infectious agents acquired through the exposure may not have produced sufficient concentrations of organisms to result in positive test results. A follow-up visit approximately 2 weeks after the most recent sexual exposure should include a repeat physical examination and collection of additional specimens. To allow sufficient time for antibodies to develop, another follow-up visit approximately 12 weeks after the most recent sexual exposure may be necessary to collect sera. A single examination may be sufficient if the child was abused for an extended time period or if the last suspected episode of abuse occurred well before the child received the medical evaluation.

The following recommendation for scheduling examinations is a general guide. The exact timing and nature of follow-up contacts should be determined on an individual basis and should be considerate of the child's psychological and social needs. Compliance with follow-up appointments may be improved when law enforcement personnel or child protective services are involved.

Initial and 2-Week Follow-Up Examinations

During the initial examination and 2-week follow-up examination (if indicated), the following should be performed:

- Visual inspection of the genital, perianal, and oral areas for genital warts and ulcerative lesions.
- Cultures for *N. gonorrhoeae* specimens collected from the pharynx and anus in both boys and girls, the vagina in girls, and the urethra in boys. Cervical specimens are not recommended for prepubertal girls. For boys, a meatal specimen of urethral discharge is an adequate substitute for an intraurethral swab specimen when discharge is present. Only standard culture systems for the isolation of *N. gonorrhoeae* should be used. All presumptive isolates of *N. gonorrhoeae* should be confirmed by at least two tests that involve different principles (e.g., biochemical, enzyme substrate, or serologic methods). Isolates should be preserved in case additional or repeated testing is needed.
- Cultures for *C. trachomatis* from specimens collected from the anus in both boys and girls and from the vagina in girls. Limited information suggests that the likelihood of recovering *Chlamydia* from the urethra of prepubertal boys is too low to justify the trauma involved in obtaining an intraurethral specimen. A urethral specimen should be obtained if urethral discharge is present. Pharyngeal specimens for *C. trachomatis* also are not recommended for either sex because the yield is low, perinatally acquired infection may persist beyond infancy, and culture systems in some laboratories do not distinguish between *C. trachomatis* and *C. pneumoniae*.

  Only standard culture systems for the isolation of *C. trachomatis* should be used. The isolation of *C. trachomatis* should be confirmed by microscopic identification of inclusions by staining with fluorescein-conjugated monoclonal antibody specific for *C. trachomatis*. Isolates should be preserved. Nonculture tests for chlamydia are not sufficiently specific for use in circumstances involving possible child abuse or assault. Data are insufficient to adequately assess the utility of nucleic acid amplification tests in the evaluation of children who might have been sexually abused, but expert opinion suggests these tests may be an alternative if confirmation is available but culture systems for *C. trachomatis* are unavailable.
- Culture and wet mount of a vaginal swab specimen for *T. vaginalis* infection. The presence of clue cells in the wet mount or other signs, such as a positive whiff test, suggests BV in girls who have vaginal discharge. The significance of clue cells or other indicators of BV as an indicator of sexual exposure is unclear. The clinical significance of clue cells or other indicators of BV in the absence of vaginal discharge also is unclear.

- Collection of a serum sample to be evaluated immediately, preserved for subsequent analysis, and used as a baseline for comparison with follow-up serologic tests. Sera should be tested immediately for antibodies to sexually transmitted agents. Agents for which suitable tests are available include *T. pallidum*, HIV, and HBsAg. The choice of agents for serologic tests should be made on a case-by-case basis (see Examination 12 Weeks After Assault). HIV antibodies have been reported in children whose only known risk factor was sexual abuse. Serologic testing for HIV infection should be considered for abused children. The decision to test for HIV infection should be made on a case-by-case basis, depending on likelihood of infection among assailant(s). Data are insufficient concerning the efficacy and safety of postexposure prophylaxis among children. Vaccination for HBV should be recommended if the medical history or serologic testing suggests that it has not been received (see Hepatitis B).

Examination 12 Weeks After Assault

An examination approximately 12 weeks after the last suspected sexual exposure is recommended to allow time for antibodies to infectious agents to develop if baseline tests are negative. Serologic tests for *T. pallidum*, HIV, and HBsAg should be considered. The prevalence of these infections differs substantially by community, and serologic testing depends on whether risk factors are known to be present in the abuser or assailant. In addition, results of HBsAg testing must be interpreted carefully, because HBV also can be transmitted nonsexually. The choice of tests must be made on an individual basis.

Presumptive Treatment

The risk for a child's acquiring an STD as a result of sexual abuse has not been determined. The risk is believed to be low in most circumstances, although documentation to support this position is inadequate.

Presumptive treatment for children who have been sexually assaulted or abused is not widely recommended because girls appear to be at lower risk for ascending infection than adolescent or adult women, and regular follow-up usually can be ensured. However, some children—or their parent(s) or guardian(s)—may be concerned about the possibility of infection with an STD, even if the risk is perceived by the health-care provider to be low. Patient or parental/guardian concerns may be an appropriate indication for presumptive treatment in some settings (i.e., after all specimens relevant to the investigation have been collected).

Reporting

Every state, the District of Columbia, Puerto Rico, Guam, the U.S. Virgin Islands, and American Samoa have laws that require the reporting of child abuse. The exact requirements differ by state, but, generally, if there is reasonable cause to suspect child abuse, it must be reported. Health-care providers should contact their state or local child-protection service agency about child abuse reporting requirements in their areas. (Information about reporting child abuse and neglect in Missouri can be found on pages 25–26 of this issue.)

Medical providers play a vital role in the prevention and control of sexually transmitted diseases (STDs). Providers can help significantly reduce the occurrence of these diseases by:

- **Evaluating each patient, as appropriate, for evidence of STDs, and for evidence of high-risk sexual behaviors.**
- **Promptly diagnosing and treating patients with STDs according to current guidelines.**
- **Providing appropriate follow-up after patients have been treated.**
- **Providing education and counseling to patients engaging in high-risk sexual behaviors.**
- **Promptly reporting, as required by Missouri law, all cases of chlamydial infection, gonorrhea, syphilis, and hepatitis B to the local health department, or to the Missouri Department of Health (DOH) at (573) 751-6463.**

Reports of cases of HIV infection/AIDS should be made as follows:

- **Health care providers in St. Louis City and St. Louis County should report the individual to the St. Louis City Department of Health and Hospitals at (314) 658-1159.**
- **Providers in the five-county Kansas City metropolitan area should report to the Kansas City Health Department at (816) 983-4200.**
- **All other providers should report to DOH's Office of Surveillance at (573) 751-6463.**

The National Network of STD/HIV Prevention Training Centers presents....

Effective STD/HIV Prevention Counseling for the Busy Primary Care Provider

March 18, 1999 - 11:00 a.m.–1:00 p.m.

This live, interactive, national satellite broadcast for clinicians will include live discussion between the moderator and faculty, and clinical vignettes demonstrating effective "client-centered counseling" techniques featuring three clients: an adolescent female client, a 35 year old pregnant client, and a 40 year old homosexual male client. At the end of the program, there will be a 30-minute question and answer session. A toll free number will be available for participants to call in with questions.

COURSE OBJECTIVES

After this program, the participant should be able to:

- Identify strategies for integrating STD/HIV risk assessment/risk reduction counseling into a clinic visit.
- Ask appropriate open-ended questions that facilitate communication and patients' adoption of risk reduction behaviors.
- Define the concept of "client-centered" risk assessment/risk reduction counseling.
- Discuss key concepts of behavior change theory related to client-centered counseling and the results of relevant research.

TARGET AUDIENCE

Physicians, nurse practitioners, nurse midwives, physician assistants, registered nurses, counselors, educators and other health care providers who provide care to patients who are at risk for STD/HIV.

CONTINUING EDUCATION

The University of Cincinnati College of Medicine designates this educational activity for a maximum of 2.0 hours in Category 1 credit towards the AMA Physician's Recognition Award. Each physician should claim only those hours s/he actually spent in the educational activity.

This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of the University of Cincinnati and the National Network of STD/HIV Prevention Training Centers. The University of Cincinnati is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. These certificates are for physicians, and physician assistants as well as nurses or advanced practice nurses in state/commonwealths that accept CME credit toward continuing education unit for nurses.

The Denver STD/HIV Prevention Training Center is approved as a provider of continuing nurses education by the Colorado Nurses Association which is accredited as an approver of continuing education in nursing by the American Nurses Credentialing Center's Commission on Accreditation. Registered Nurses and Nurse Practitioners will receive 2.4 contact hours after viewing this program.

WAYS OF VIEWING CONFERENCE

Choose a prearranged site in your state and register to attend the conference. Arrive at the site by 10:30 a.m., CST, Thursday, March 18, 1999.

OR

View at your own facility via satellite. To become a site, please call (314) 747-0294 by Thursday, March 11, 1999 and we will help you make the necessary arrangements. The building or site in your area must have a satellite dish, a technician and a phone.

WAYS TO REGISTER

Upon registration, your place is reserved.

Internet: register directly on the web at **http://inpharmatics.uc.edu/stdptc.html**

Mail: Registrations are due by Thursday, March 11, 1999.

Fax: Please copy the registration form on white paper, complete the form, then fax it to (314) 362-1872.

E-mail: Send all of the information on the registration form to: dschenew@ximgate:wustl.edu

Phone: We will accept registrations over the phone between **March 9–16, 1999.** Please call (314) 747-1522. Please be aware that space at prearranged sites may be limited by this time.

Registration Form

Last Name _____ First Name _____ Profession _____

Name of Work/Organization _____

Address: _____

City: _____ State: _____ Zip: _____ Email address:_____

Work Phone: ( ) _____ Home Phone: ( ) _____ Fax Number: ( )_____

Send registration form by March 11, 1999 to: St. Louis STD/HIV Prevention Training Center, Washington University School of Medicine, 660 So. Euclid, Campus Box 8051, St. Louis, Missouri 63110.

Reporting Child Abuse and Neglect in Missouri

Information provided by
Division of Family Services
Department of Social Services.

Who must report child abuse and neglect?

In Missouri, professionals such as physicians, dentists and teachers are required by law to call the child abuse and neglect hotline if they have reasonable cause to suspect abuse or neglect. These professionals are in a unique position to identify problems that put children in danger. Reasonable cause to suspect means a standard of reasonable suspicion, rather than conclusive proof. A report may also be made to any law enforcement agency or juvenile office, although this does not take the place of making a report to the Division of Family Services, Department of Social Services.

What is child abuse and neglect?

Abuse is defined as: ".. Any physical injury, sexual abuse or emotional abuse inflicted on a child other than by accidental means by those responsible for his care, custody and control except that discipline including spanking, administered in a reasonable manner shall not be constituted to be abuse."

Neglect is defined as: ".. Failure to provide, by those responsible for the care, custody and control of the child, the proper or necessary support, education as required by law, nutrition or medical, surgical or any other care necessary for the child's well-being."

Those responsible for the care, custody and control of the child are defined as: "... include but not limited to the parents or guardian of a child, other members of the child's household, or those exercising supervision over a child for any part of a 24 hour day. Also included is any adult, who, based on their relationship to the parents of the child, members of the child's household or the family, has access to the child." (Section 210.110, RSMo)

How to report suspected child abuse and neglect

If you suspect that a child is being abused or neglected, call the Division of Family Services' toll-free hotline at (800) 392-3738. A social worker will ask you questions to determine if your information matches the criteria established by state statute as abuse or neglect. You can also call your local Division of Family Services office to discuss your concerns. The local office staff can advise you whether to call the hotline.

What information is needed?

It will be important for you to know the identity of the child, parents and the alleged perpetrator and where the child can be located. You must have specific allegations of abuse or neglect. According to state law, the alleged perpetrator must have care, custody and control of the child for a finding of abuse or neglect. In Missouri, a child is anyone under the age of 18. For other questions that you might be asked, see the sidebar on page 26.

Do reporters have to give their name?

In Missouri, reporters do not have to identify themselves. However, by giving your name, staff will be able to contact you for more information that might be needed. The names of all reporters are kept strictly confidential and will not be released to the family, child or the alleged perpetrator.

Immunity/Penalties

The law provides immunity from civil or criminal liability to those who are required to make reports, and also in cooperating with the Division of Family Services, any law enforcement agency, or the juvenile office in the completion of an investigation. Immunity is provided regardless of the outcome of the investigation, however, it does not apply if a person intentionally makes a false report.

Save a Child

Child Abuse/Neglect Hotline

(800) 392-3738
Statewide toll-free 24 hours

(314) 751-3448
Outside Missouri

Failure to report is a Class A misdemeanor for a person who is required under the law to report, Filing a false report is also a Class A misdemeanor.

What happens after the call?

If the information meets the criteria for abuse/neglect, the information is transmitted electronically or over the phone to the local office for investigation. If the child is unsafe, county staff will immediately make contact with the child to determine how the child can be made safe while the investigation is conducted. All investigations start within 24 hours after the call is received. The normal process is for staff to contact the reporter, then the family and finally the alleged perpetrator. If the report suggests a criminal violation, law enforcement will be requested to assist in the investigation. Most investigations are completed within 30 days of the initial call to the hotline.

What if the report does not constitute abuse or neglect?

Concerned citizens sometimes call about situations that do not meet the criteria for abuse and neglect or lack important information that is necessary for an investigation to be conducted. In some instances, the reporter will be asked to call back if they receive the needed information. The Division of Family Services may refer the call to the local office if the family could benefit from preventive services.

(continued on page 26)

(continued from page 25)

What if the report involves a child-care facility?

The Division of Family Services investigates reports of child abuse or neglect in schools, child care centers, residential care facilities and foster homes. When a report is received on a facility, the investigation is assigned to specially-trained professionals in the Out-of-Home Investigations Unit.

What happens after the investigation is conducted?

After conducting a comprehensive investigation, the social worker will decide if abuse or neglect occurred (probable cause) or if there is insufficient evidence to say the abuse/neglect occurred (unsubstantiated). If the investigation is unsubstantiated but the family is at risk of abuse or neglect, the social worker may recommend services. If the case is found "probable cause," the first priority for the Division of Family Services is to keep children safe.

The social worker might open a **family-centered services** case to help the family identify services that will prevent or remedy abuse or neglect. **Temporary support services** such as counseling, child care, homemaker or parenting classes may also be provided. If the child is at immediate risk of being removed, **Intensive In-Home Services** can be provided to keep the child safe in the home. The intent of the division's intervention is to reduce the risk of future abuse or neglect and connect the family to community spots.

What happens if the child cannot remain at home?

If a child is at immediate risk of serious harm and no appropriate intervention can reduce their risk, the Division of Family Services will recommend to the juvenile court that the child be removed from the home. **The Division of Family Services cannot remove the child from the home without a court order.**

Child abuse and neglect hotline unit

The hotline unit is staffed by trained and experienced social service workers. All staff have a bachelor or masters degree and attend a preservice training program, as well as ongoing in-service general and specialized training to assist them in interviewing callers, assessing information and classifying report of abuse or neglect.

The hotline unit operates the statewide toll-free telephone service 24 hours a day/365 days a year. Staff are available at all times to accept calls and to assist callers in making reports of abuse or neglect and by providing referral services when appropriate.

Annually, the hotline unit accepts and processes approximately 100,000 calls. Over half of these calls are investigated. Another 25,000 calls are referred to local agencies and the remaining calls receive telephone assistance or referral.

Reporting Child Abuse/Neglect

The following information, if available, should be provided when making a report:

- The name, address, present whereabouts, sex, race and birth date or estimated age of the reported child or children and of any other children in the household.
- The name(s), address(es) and telephone number(s) of the child's parent(s), or other person(s) responsible for the child's care.
- The name(s), address(es) and telephone number(s) of the person(s) alleged to be responsible for the abuse or neglect, if different from the parent(s).
- Directions to the home, if available, when the child's address is general delivery, rural route or only a town.
- Other means of locating the family.
- Parents/alleged perpetrators' place of employment and work hours, if known.
- The full nature and extent of the child's injuries, abuse or neglect, and any indication of prior injuries, including the reason for suspecting the child may be subjected to conditions resulting in abuse or neglect.
- Any event that precipitated the report.
- An assessment of the risk of further harm to the child and, if a risk exists, whether it is imminent.
- If the information was provided by a third party, or if there were witnesses, the identity of that person(s).
- The circumstances under which the reporter first became aware of the child's alleged injuries, abuse or neglect.

Recommended Childhood Immunization Schedule
Missouri, January - December 1999

Vaccines[1] are listed under the routinely recommended ages.

Bars indicate range of acceptable ages for immunization. Catch-up immunization should be done during any visit when feasible.

Shaded ovals indicate vaccines to be assessed and given if necessary during the early adolescent visit.

Vaccines listed below the dashed line are not given to all children routinely but are recommended in special circumstances.

Age ➢ / Vaccine ➘	Birth	1 mo	2 mos	4 mos	6 mos	12 mos	15 mos	18 mos	2 yrs	4-6 yrs	11-12 yrs	14-16 yrs
Hepatitis B[2, 3]	Hepatitis B-1		Hepatitis B-2		Hepatitis B-3						Hep B[3]	
Diphtheria, Tetanus, Pertussis[4]			DTaP	DTaP	DtaP	DTaP[4]				DTaP	Td	
H. influenzae type b[5]			Hib	Hib	Hib	Hib						
Polio[6]			IPV[6]	IPV[6]	Polio[6]					Polio		
Measles, Mumps, Rubella[7]						MMR				MMR[7]	MMR[7]	
Varicella[8]						Varicella					Var[8]	
Rotavirus[9]			Rota-virus[9]	Rota-virus[9]	Rota-virus[9]							
Hepatitis A[10]									Hepatitis A			
Influenza[11]					Influenza							
Pneumococcal[12]									Pneumococcal			

Notes

1. This schedule indicates the recommended age for routine administration of currently licensed childhood vaccines. Some combination vaccines are available and may be used whenever administration of all components of the vaccine is indicated. Providers should consult the manufacturers' package inserts for detailed recommendations.
2. **Infants born to HBsAg-negative mothers** should receive 5 µg of Merck vaccine (Recombivax HB®) or 10 µg of SmithKline Beecham (SB) vaccine (Engerix-B®). The second dose should be administered at least 1 month after the first dose. The third dose should be given at least 2 months after the second, but not before 6 months of age. Children who have begun the series with a 2.5 µg dose may complete the series with either a 2.5 µg dose or a 5 µg dose.

   Infants born to HBsAg-positive mothers should receive 0.5 mL hepatitis B immune globulin (HBIG) within 12 hours of birth, and either 5 µg of Merck vaccine (Recombivax HB®) or 10 µg of SB vaccine (Engerix-B®) at a separate site. The second dose is recommended at 1-2 months of age, and the third dose at 6 months of age.

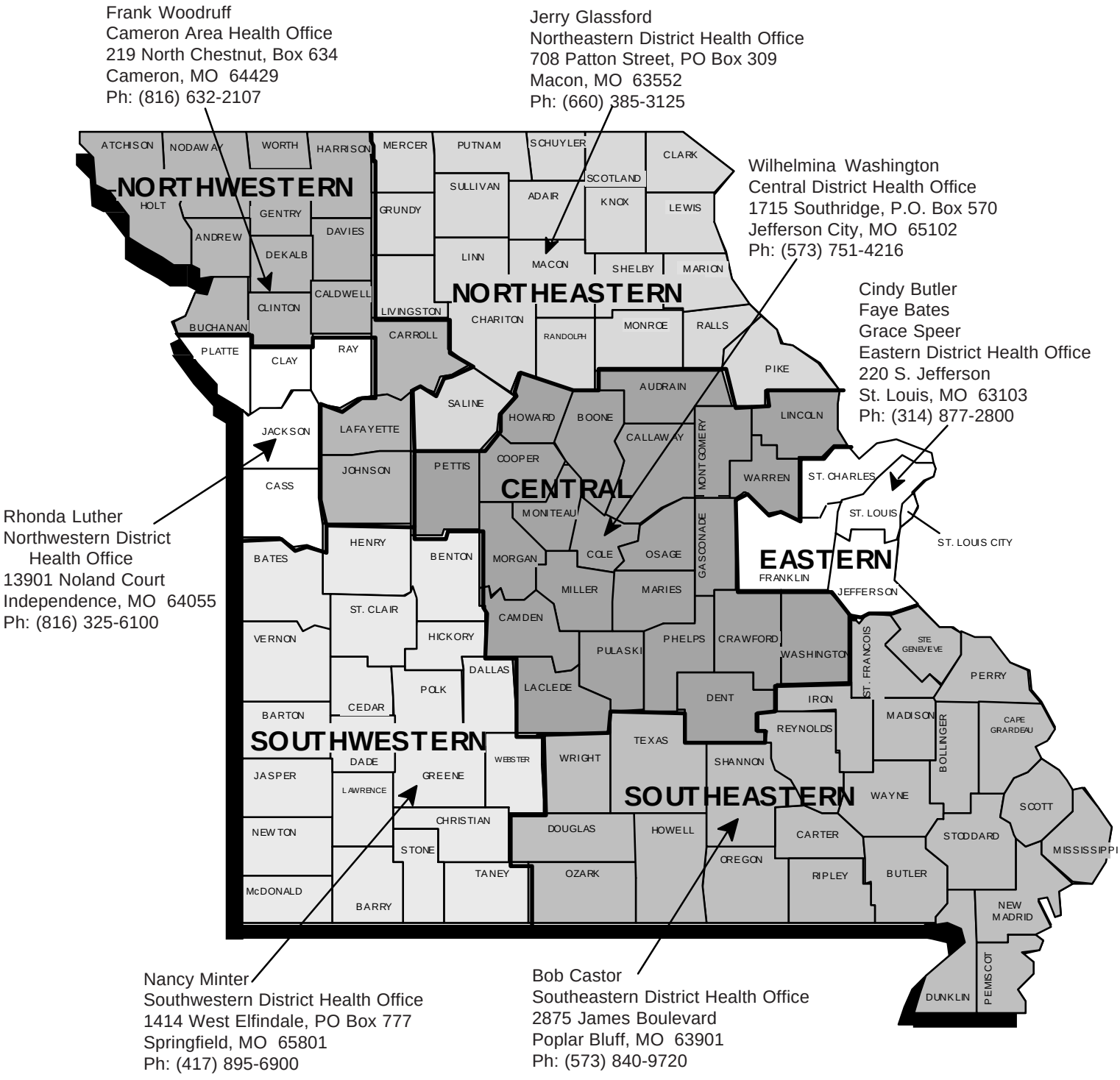
   Infants born to mothers whose HBsAg status is unknown should receive either 5 µg of Merck vaccine (Recombivax HB®) or 10 µg of SB vaccine (Engerix-B®) within 12 hours of birth. The second dose of vaccine is recommended at 1 or 2 months of age, and the third dose at 6 months of age. Blood should be drawn at the time of delivery to determine the mother's HBsAg status; if it is positive, the infant should receive HBIG as soon as possible (no later than 1 week of age). The dosage and timing of subsequent vaccine doses should be based upon the mother's HBsAg status.
3. Children and adolescents who have not been vaccinated against hepatitis B in infancy may begin the series during any visit. Those who have not previously received 3 doses of hepatitis B vaccine should initiate or complete the series during the 11-12-year-old visit, and unvaccinated older adolescents should be vaccinated whenever possible. The second dose should be administered at least 1 month after the first dose, and the third dose should be administered at least 4 months after the first dose and at least 2 months after the second dose.
4. DTaP (diphtheria and tetanus toxoids and acellular pertussis vaccine) is the preferred vaccine for all doses in the vaccination series, including completion of the series in children who have received 1 or more doses of whole-cell DTP vaccine. Whole-cell DTP is an acceptable alternative to DTaP. The fourth dose (DTP or DTaP) may be administered as early as 12 months of age, provided 6 months have elapsed since the third dose and if the child is considered unlikely to return at 15-18 months of age. Td (tetanus and diphtheria toxoids) is recommended at 11-12 years of age if at least 5 years have elapsed since the last dose of DTP, DTaP or DT. Subsequent routine Td boosters are recommended every 10 years.
5. Three H. influenzae type b (Hib) conjugate vaccines are licensed for infant use. If PRP-OMP (PedvaxHIB® [Merck]) is administered at 2 and 4 months of age, a dose at 6 months is not required.
6. Two poliovirus vaccines are currently licensed in the United States: inactivated poliovirus (IPV) vaccine and oral poliovirus (OPV) vaccine. The ACIP, AAP, and AAFP now recommend that the first 2 doses of poliovirus vaccine should be IPV. The ACIP continues to recommend a sequential schedule of 2 doses of IPV administered at ages 2 and 4 months, followed by 2 doses of OPV at 12-18 months and 4-6 years. Use of IPV for all doses also is acceptable and is recommended for immunocompromised persons and their household contacts

   OPV is no longer recommended for the first 2 doses of the schedule and is acceptable only for special circumstances such as: children of parents who do not accept the recommended number of injections, late initiation of immunization which would require an unacceptable number of injections, and imminent travel to polio-endemic areas. OPV remains the vaccine of choice for mass immunization efforts. This schedule remains due to wild poliovirus.
7. The second dose of MMR is recommended routinely at 4-6 years of age, and is required for school entry, but may be administered during any visit, provided at least one month has elapsed since receipt of the first dose and that both doses are administered at or after 12 months of age. Those who have not **previously** received the second dose should complete the schedule no later than the 11-12-year visit.
8. Susceptible children may receive varicella vaccine during any visit after the first birthday, and those who lack a reliable history of chickenpox should be vaccinated during the 11-12-year-old visit. Susceptible persons 13 years of age or older should receive 2 doses, at least one month apart.
9. **Rotavirus:** Health care providers may require time and resources to incorporate this new vaccine into practice. The AAFP feels that the decision to use rotavirus vaccine should be made by the parent or guardian in consultation with his or her physician or other health care provider. The first dose of rotavirus vaccine should not be administered before 6 weeks of age and the minimum interval between doses is 3 weeks. The rotavirus series should not be initiated at 7 months of age or older and all doses should be completed by the first birthday.
10. Give hepatitis A vaccine to children and adolescents who are at increased risk of infection, as defined by ACIP, and consider for all other persons >2 years of age wishing to obtain immunity. A booster should be given ≥6 months after the initial dose.
11. **Influenza:** Influenza vaccine should be given annually to children ≥6 months of age who have specific risk factors, as defined by ACIP. Children ≤12 years should receive split virus vaccine in a dosage appropriate for their age (0.25 mL if 6-35 months of age or 0.5 mL if ≥3 years). Children <9 years of age who are receiving influenza vaccine for the first time should receive 2 doses separated by at least one month.
12. **Pneumococcal:** Give pneumococcal vaccine to children ≥2 years of age at increased risk of acquiring systemic pneumococcal infections or increased risk of serious disease if they become infected. Give a second dose to children at highest risk of serious pneumococcal infection, as defined by ACIP. This includes those ≤10 years of age if ≥3 years from first dose and those >10 years of age if ≥5 years from first dose.

Sources: Based on recommendations of the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP).

MISSOURI DEPARTMENT OF HEALTH

District Immunization Representatives



This map shows the division of counties into Department of Health districts and gives the names of the district immunization representatives. Feel free to contact your district immunization representative with questions regarding the new immunization schedule or other immunization issues.

VIDEOCONFERENCES in 1999

The Section of Vaccine-Preventable and Tuberculosis Disease Elimination will sponsor the following Centers for Disease Control and Prevention (CDC) satellite broadcasts:

Preparing for the Next Influenza Pandemic

February 25, 1999

This program will introduce the planning guidelines to facilitate state and local emergency response preparations—preparations which can be adapted to other community crises. Attendees will have the opportunity to lay out the blueprint for community plans and determine responsibilities for specific activities in a crisis situation. Please contact the Local Public Health Agency in your area or the Section for broadcast location and time.

Epidemiology and Prevention of Vaccine-Preventable Diseases

March 25, April 1, 8 and 15, 1999 (4-day course)

This program will provide the most current information about the vaccine-preventable diseases and the vaccines which provide protection against these diseases.

Immunization Update

September 16, 1999

This program will provide the most current information available in the constantly changing field of immunization.

Surveillance of Vaccine-Preventable Diseases

December 2, 1999

This program will provide guidelines for vaccine-preventable surveillance, case investigation and outbreak control.

These live, interactive satellite videoconferences feature question and answer sessions in which participants can address questions to the course instructors on toll-free telephone lines. Continuing education credits will be offered for a variety of professions.

For more information about the courses, site locations and times, contact the immunization representative located in your district health office or the Section of Vaccine-Preventable and Tuberculosis Disease Elimination at (800) 699-2313.

Maternal Smoking Trends in Missouri

(continued from page 4)

REFERENCE:

1. NCHS-CDC. Smoking during pregnancy, 1990–1996. National Vital Statistics Report Nov. 19, 1998; 47(10).

For additional information on smoking trends in Missouri, see the following references:

- Hagdrup N, Simoes E, Brownson RC. Selected chronic disease risk factors in Missouri: 10-year trends and predictions for the year 2000. Am J Prev Med 1997;13:45–50.
- Miller N, Simoes EJ, Murayi T. Tobacco use among Missouri high school students, 1995. Missouri Med 1997;94:332–337.
- Miller N, Simoes EJ, Chang J. Smoking attributable mortality in Missouri, 1995. Missouri Med 1997;94:661–665.

Editorial Note: Missouri smoking rates have fallen—but not as much as the United States—and each year since 1990 Missouri has ranked in the top six of states with the highest maternal smoking rates. With our adult smoking rates being second and high school student rates ranking fifth highest, more efforts are needed to prevent and reduce smoking in Missouri. Massachusetts—with a strong tobacco control program—decreased maternal smoking by nearly 50%.

Dr. Marion Warwick Appointed Chief, Section of Communicable Disease and Veterinary Public Health

Marion Warwick, M.D., M.P.H., was appointed the Chief of the Missouri Department of Health's Section of Communicable Disease and Veterinary Public Health (previously the Bureau of Communicable Disease Control) in August 1998. Dr. Warwick will be responsible for the public health response to communicable and zoonotic diseases.

Dr. Warwick received her medical education from the University of Minnesota Medical School. She is board certified in preventive medicine and family practice. Her preventive medicine residency was at the University of Massachusetts and her family practice residency was at the Hennepin County Medical Center in Minneapolis, Minnesota. She also has a Masters in Public Health from the University of Massachusetts.

Dr. Warwick worked as a staff physician for the University of Minnesota before coming to Missouri. She worked for the St. Louis City Department of Public Health as a communicable disease physician, where she was in charge of surveillance of reportable diseases and disease investigations. She became medical consultant to the Missouri Department of Health Bureau of HIV/AIDS Care and Prevention Services as well as to the Division of Environmental Health and Communicable Disease Prevention in July 1997.

You may contact Dr. Warwick at the Section of Communicable Disease and Veterinary Public Health at (573) 751-6113.

Tuberculosis Awareness Fortnight

March 14–27, 1999

The Missouri Department of Health Section of Vaccine-Preventable and Tuberculosis Disease Elimination along with the American Lung Associations of Eastern and Western Missouri recognize Tuberculosis Awareness Fortnight, March 14–27, 1999 and World TB Day on March 24, 1999.

Hospitals are encouraged to conduct tuberculosis grand rounds during this time. Physicians and health care providers are encouraged to participate by providing displays, educational materials and lectures to staff and clients on the importance of tuberculosis screening, prevention and treatment.

A physician's seminar on tuberculosis is planned in St. Louis on March 25. The speaker will be Patricia Simone, M.D., Chief of the Field Services Branch, Division of Tuberculosis Elimination, Centers for Disease Control and Prevention. For more information on this seminar, call the American Lung Association of Eastern Missouri at (314) 645-5505.

Grand rounds are being planning in the Kansas City area on March 26 at St. Luke's Hospital of Kansas City at 7:45 a.m. and at University of Missouri–Kansas City School of Medicine at 12:00 noon. The speaker at both sites will be Daniel F. Hoft, M.D., Ph.D. from the Division of Infectious Diseases and Immunology at St. Louis University Health Sciences Center. For more information on the grand rounds, call the American Lung Association of Western Missouri at (816) 842-5242.

If you are interested in additional information or would like some literature on tuberculosis, please contact:

Section of Vaccine-Preventable and Tuberculosis Disease Elimination
(800) 611-2912

Missouri EPIDEMIOLOGIST

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The Managing Editor is H. Denny Donnell, Jr, MD, MPH, State Epidemiologist. Production Manager is Diane C. Rackers. Questions or comments should be directed to (573) 751-6128 or toll free (800) 392-0272.

Alternate forms of this publication for persons with disabilities may be obtained by contacting the Missouri Department of Health, Office of Epidemiology, P.O. Box 570, Jefferson City, MO 65102-0570, Ph: (573) 751-6128. TDD users can access the preceding phone number by calling (800) 735-2966.

LATE BREAKERS

☞ **Influenza Season Begins in Missouri**—Three cases positive for influenza A by the new rapid-antigen method have been reported in Missouri, a 19-year-old student from Columbia on October 31, a 9-year-old from Chillicothe on December 1 and a 93-year-old nursing home resident from St. Louis County on December 11. Another influenza case was reported on November 9; an adult visitor to Missouri from the state of Louisiana. On December 24, a 19-year-old student from Truman State University became Missouri's first viral culture, laboratory-confirmed case of influenza A, subtyped H3N2. The student had onset of influenza symptoms on December 7. When compared to last season, the 1998–99 influenza season is off to a very slow start. During the 1997–98 season, 98% of the confirmed cases of influenza in Missouri were type A, and the season peaked in the last week of January. If you have questions regarding influenza, contact the Section of Communicable Disease Control and Veterinary Public Health at (800) 392-0272.

☞ **Product Recall**—From early August 1998 through January 6, 1999, at least 50 illnesses, six deaths and two spontaneous abortions caused by a rare strain of the bacterium *Listeria monocytogenes*, serotype 4b, were reported to the Centers for Disease Control and Prevention by 11 states. The vehicle for transmission was identified as hot dogs, and possibly deli meats, produced under many brand names manufactured by Bil Mar Foods. Bil Mar Foods voluntarily recalled specific production lots of hot dogs and deli meats on December 22. The affected products included hot dogs and deli meats with the brand names Ball Park, Bil Mar, Bryan Bunsize, Bryan 3-lb Club Pack,Grillmaster, Hygrade, Mr. Turkey, Sara Lee Deli Meat and Sara Lee Home Roast brands. As of January 8, 1999, only one probable case of *Listeria* associated with the recall has been identified in Missouri. If you have questions regarding *Listeria* or the recall, contact your local health department or the Section of Communicable Disease Control and Veterinary Public Health at (800) 392-0272.